Phase II Stormwater Management Program 2017 Annual Report

Permit No. MI0057364

March 2018

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
BMP	Best Management Practice
EOC	Engineering Operations Committee
EPA	United States Environmental Protection Agency
FY	Fiscal Year
IDEP	Illicit Discharge Elimination Program
LTAP	Local Technical Assistance Program
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
MEP	Maximum Extent Practicable
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
PIPP	Pollution Incident Prevention Plans
PPGH	Pollution Prevention Good Housekeeping
QAQC	Quality Assurance Quality Control
ROW	Right of Way
SCOE	AASHTO Standing Committee on the Environment
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
TSC	Transportation Service Center
YTD	Year to Date

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1. Introduction

This Annual Report presents stormwater pollution control activities implemented by Michigan Department of Transportation (MDOT) during the 2017 monitoring period, in compliance with the National Pollutant Discharge Elimination System (NPDES) Permit No. MI0057364, hereinafter referred to as the Permit. The Permit was issued by the Michigan Department of Environmental Quality (MDEQ) and expired on April 1, 2009. The Permit has been administratively extended and MDOT is continuing to comply with the existing permit. A permit renewal application was submitted for review and the new permit is expected to be issued during 2018.

As part of the renewal application, MDOT has created a comprehensive Stormwater Management Plan (SWMP) designed to reduce the discharge of pollutants from the MDOT drainage systems to the maximum extent practicable (MEP), protect the designated uses of the waters of the state, increase awareness of stormwater as a potential source of pollutants, and satisfy the applicable state and federal water quality requirements.

1.1. Report Objectives

The objectives for this annual report are as follows:

- To inform MDOT Staff about SWMP activity accomplishments
- To satisfy MDOT's annual reporting requirement of the Permit
- To evaluate and assess the appropriateness and effectiveness of MDOT's SWMP, and
- To present information about new programs, changes to current programs and procedures developed by MDOT.

1.2. Report Organization

The annual report highlights actions MDOT has completed in 2017 to fulfill Permit requirements. The reported information closely follows the requirements of the six minimum measures of the Permit which include:

- Public Education Program
- Public Involvement and Participation
- Illicit Discharge Elimination Plan (IDEP)
- Post Construction Stormwater Management for New Development and Redevelopment Projects
- Construction Stormwater Runoff Control
- Pollution Prevention/Good Housekeeping for MDOT Operations

Details on these activities can be found in the appendices at the end of the report.

1.3. Program Assessment

Program assessment is primarily determined by MDOT's adherence to the activities and measurable goals committed to in the SWMP, as well as regular evaluation of stormwater related procedures, training, and programs.

1.4. Summary

During 2017, MDOT worked toward completing the activities laid out in the SWMP. Several of these activities are ongoing and completed each year. Work on many of the activities has not yet begun. Due to time and budget management purposes, activities that are not required to be completed each year are divided between the five years of the permit cycle.

With the updated SWMP, care will be taken to ensure that MDOT's commitments, as written in the SWMP, are fulfilled; however, as the program evolves, modifications may need to be made to the original activity, the measurable goal, or both. Details regarding current activities, measurable goals, and their assessment method are contained in the Appendices.

MDOT will continue to integrate stormwater management awareness across all business areas. Informing and educating MDOT Regions, TSCs, Maintenance Regions, and Garages about the new stormwater permit requirements will be a priority in 2018. Significant changes have been implemented that will impact many design and operational functions of MDOT. MDOT remains committed to allocating the necessary resources to meet the requirements of the Permit meeting environmental regulations for stormwater discharges.

2. Public Education Program

In order to educate MDOT employees as well as the general and job related public on stormwater management, MDOT has developed several mediums for which to convey information. MDOT employees have access to information focused on stormwater by utilizing the reference library, various training modules, a pesticide/fertilizer certification course, and stormwater operator staff training. The job-related public is provided with specified information when applying for a permit, such as a tap-in discharge permit.

MDOT has developed several displays and handout materials targeting the general public's various audiences including school-age children and transportation construction. The materials are available, in electronic format, for viewing and downloading from the MDOT Stormwater Public Web Page. In addition, MDOT distributes these materials at various events, as applicable.

The following section presents the seven Public Education Program activities as outlined in the SWMP. Appendix A presents each activity's table, including a description of objectives completed in 2017.

2.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix A. Detailed descriptions of each activity can be referenced in the SWMP.

- Education 1: Stormwater and Watershed Stewardship Reference Library
- Education 2: Stormwater Management Website
- Education 3: Stormwater Management Education Brochures
- Education 4: Educational Materials for Tap-In Discharge Permits
- Education 5: Training Modules
- Education 6: Pesticide/Fertilizer Applicator Certification
- Education 7: Staff Training for Part 91 and Stormwater Operators

2.2. Upcoming Monitoring Year Goals

Future monitoring years will include various efforts within the Public Education Program, as presented below:

For Activity Education 1, there will be an effort from 2018-2020 to transfer the existing physical library to an online database on the MDOT stormwater website.

For Activity Education 2, a contact for questions and concerns related to MDOT's stormwater management program was added to the website. This will make it easier for the general public to voice opinions about the program. This activity is closely related to the measurable goal Public Involvement and Participation.

MDOT will begin to review and update educational brochures related to stormwater management in 2018, as described in Activity Education 3. These brochures will continue to be passed out at relevant events, as well.

Activity Education 4 will be a focus for the year 2018 and involves reviewing and updating the educational materials that are distributed along with Tap-In Discharge Permits.

MDOT will continue to review and update the training modules, train staff in pesticide and fertilizer application, and track the number of staff trained under Part 91 and Stormwater Operators as described in Activities Education 5, 6 and 7.

3. Public Involvement and Participation

In addition to providing educational materials to MDOT staff and the public, MDOT is also working to encourage public input in the SWMP and strengthen relationships with other agencies interested in the better management of stormwater. Strategies have been devised to encourage and track comments to the SWMP on the public stormwater website and to pursue relationships with other state and local agencies to further stormwater management practices on various projects. Several activities listed under other minimum measures will also help to achieve the goal of this minimum measure.

The following section presents the three Public Involvement and Participation activities as outlined in the SWMP. Appendix B presents each activity's table, including a description of objectives completed in 2017.

3.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix B. Detailed descriptions of each activity can be referenced in the SWMP.

- Public Involvement 1: Public Comment of SWMP
- Public Involvement 2: Development of Offset Program
- Public Involvement 3: Identify and Coordinate with MPOs Having SWMPs

3.2. Upcoming Monitoring Year Goals

Future monitoring years will include various efforts within Public Involvement & Participation, as presented below:

Under Activity Public Involvement 1, MDOT will finalize the draft of the SWMP using comments from MDEQ. This draft will be posted on MDOT's stormwater website and distributed to all TSCs and Region offices. In addition, a comment forum will be developed so the public can easily submit comments. MDOT will report and respond to public comments on the SWMP and post the final SWMP on the MDOT stormwater website by the end of 2018, pending permit approval.

Activity Public Involvement 2 involves developing a list of organizations for other state agencies, drain commissioners and municipalities to reach out to for offset programs. This will be a focus for 2019.

MDOT will continue to consider watershed and environmental groups input during early coordination of MDOT projects, per the objective of Activity Public Involvement 3.

4. Illicit Discharge Elimination Plan

This annual report assesses the IDEP as one of the six minimum measures stated in the Permit to be reviewed by the MDEQ. The framework for the IDEP activities is outlined in the MDOT SWMP (MDOT, 2016). MDOT's strategies provide for continued identification of illicit discharges and the notification and removal of such connections and discharges.

The following section presents the five IDEP activities as outlined in the SWMP. Appendix C presents each activity's table, including a description of objectives completed in 2017.

4.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix C. Detailed descriptions of each activity can be referenced in the SWMP.

- IDEP 1: Maintain List of Construction Projects and Maintenance Activities
- IDEP 2: Urban Area Outfall Mapping
- IDEP 3: Dry Weather Screening
- IDEP 4: Review Procedure for Receiving and Notifying MDEQ of Illicit Discharges
- IDEP 5: Determining Effectiveness of IDEP

4.2. Upcoming Monitoring Year Goals

Future monitoring years will include various efforts within the IDEP, as presented below.

Under Activity IDEP 1, MDOT will develop an annual list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year. This activity will continue to be completed each year of the permit cycle.

MDOT will update any outfall maps as needed throughout the permit cycle, in accordance with Activity IDEP 2. In 2018, MDOT will focus on the development of an identification system for all outfall structures.

The measurable goals under Activity IDEP 3 are a combination of ongoing activities and activities that will be spread between the five year permit cycle. For example, the first measurable goal of following the illicit discharge procedure for all illicit discharges and connections will be ongoing. The pilot dry weather screening project will be completed over a five year period. In 2016, the desktop analysis was completed. In years 2017 through 2020, field work and data gathering will be completed. In 2020, the pilot project will be completed and the program results can be assessed.

For Activity IDEP 4, a review of the procedure for receiving the notice of an illicit discharge shall be reviewed and updated if necessary by the end of 2018.

Per Activity IDEP 5, illicit discharge notices and resolutions have been reported in the 2017 Annual Report. A list of the illicit discharge investigations are available in Activity IDEP 3. This is an ongoing activity and will be done for each year during the permit cycle.

5. Post Construction Stormwater Management for New Development and Redevelopment Projects

MDOT's Post Construction Stormwater Management for New Development and Redevelopment Projects is a measure designed to address post construction stormwater runoff from MDOT projects and procedures for addressing post construction runoff from projects outside of the MDOT right-of-way. These goals will be achieved through structural best management practices (BMPs) designed to remove pollutants and possibly limit runoff rates from MDOT rights-of-way and other facilities.

The following section presents the six activities for Post Construction Stormwater Management for New Development and Redevelopment Projects, as outlined in the SWMP. Appendix D presents each activity's table, including a description of objectives completed in 2017.

5.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix D. Detailed descriptions of each activity can be referenced in the SWMP.

- Post Construction 1: Structural BMP Mapping
- Post Construction 2: BMP Maintenance Requirements
- Post Construction 3: Selection and Application of BMPs
- Post Construction 4: Water Quality and Channel Protection Compliance
- Post Construction 5: TMDL Compliance
- Post Construction 6: Drainage Manual Update
- Post Construction 7: Site Plan Reviews for Projects

5.2. Upcoming Monitoring Year Goals

Future monitoring years will include several efforts within Post Construction Stormwater Management, as presented below.

Under Activity Post Construction 1, MDOT will update the map of all known BMPs in the state at the end of 2018. Furthermore, MDOT plans to develop a means of communicating newly constructed BMPs to the Stormwater Program Manager during 2018.

Per Activity Post Construction 2, MDOT will review the maintenance performance guidelines in 2018. It will be a focus for each year to develop maintenance procedures for new structural BMPs and notify appropriate staff of these procedures.

Under Activity Post Construction 3, MDOT has developed a BMP selection tool which has been distributed to MDOT designers. For 2018, it is a goal to continue to issue staff guidance with the selection tool and focus on developing maintenance procedures for structural BMPs.

Activity Post Construction 4 involves complying with performance standards for water quality and water quantity. The BMP selection tool developed in Activity Post Construction 3 was distributed to MDOT designers and it is a goal for 2018 to continue to test this tool for future projects. Furthermore, for existing structural BMPs, MDOT will continue to document their modification, replacement, or enhancement.

Activity Post Construction 5 includes the review of projects which discharge to water bodies with TMDLs. To comply with this activity, MDOT has developed a BMP selection tool which uses an interactive mapping system showing where MDOT trunklines cross 303(d) listed water bodies. This will make designers aware if their project discharges to a water body with a TMDL that they must meet these requirements. MDOT will continue to review all future projects using this tool.

Activity Post Construction 6 discusses periodically updating the drainage manual. Instead of updating the drainage manual, MDOT has decided to create a supplementary document which discusses post-construction BMP design in further detail. In the upcoming year, 2018, finalizing this document will be a focus.

Activity Post Construction 7 outlines the goals of having initial site plans of post-construction stormwater BMPs being reviewed by MDOT stormwater staff. This activity will be a focus for 2019-2020.

6. Construction Stormwater Runoff Control

Per the Permit, MDOT is required to establish and maintain a Soil Erosion and Sedimentation Control program. Appropriate MDOT staff are trained and certified under this program. MDOT continually educates it contractors about its Soil Erosion and Sedimentation Control program (SESC), as well, on a project by project basis using the information discussed at preconstruction meetings.

The following section presents the Construction Stormwater Runoff Control activity as outlined in the SWMP. Appendix E presents the activity table, including a description of objectives completed in 2017.

6.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix E. Detailed descriptions of each activity can be referenced in the SWMP.

- Construction 1: Review of Stormwater Runoff QAQC Protocol

6.2. Upcoming Monitoring Year Goals

The efforts related to Activity Construction 1 will be a focus for 2019. These efforts include reviewing and updating the QAQC protocol for construction stormwater control and issuing staff guidance.

7. Pollution Prevention / Good Housekeeping

The ultimate goal of the Pollution Prevention and Good Housekeeping program is to prevent or reduce pollutant runoff from MDOT operations and properties to the MEP. Facilities covered under this measure include: MDOT offices, bridge facilities, maintenance garages, central repair, welcome centers, rest areas, roadside parks and scenic turnouts.

The following section presents the four Pollution Prevention / Good Housekeeping activities as outlined in the SWMP. Appendix F presents each activity's table, including a description of objectives completed in 2017.

7.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix F. Detailed descriptions of each activity can be referenced in the SWMP.

- Pollution Prevention 1: BMP Inspections
- Pollution Prevention 2: PIPP Audits
- Pollution Prevention 3: Maintenance Facility Inspections
- Pollution Prevention 4: Documentation of Road Maintenance Activities

7.2. Upcoming Monitoring Year Goals

The 2018 monitoring year will include a number of efforts within Pollution Prevention / Good Housekeeping, as presented below.

Under Activity Pollution Prevention 1, 38 BMPs are scheduled for inspection in 2018, 31 are scheduled for 2019, 34 are scheduled for 2020. The findings of these inspections will be given to the Stormwater Program Manager and any recommendations will be addressed in the following year. At the end of the five year permit cycle, each structural BMP will have been inspected.

Activity Pollution Prevention 2 discusses auditing the pollution incident prevention plans every three years. In 2018, a new schedule for this activity will be developed such that this schedule will be met, and audits are scheduled to begin in 2018.

In compliance with Activity Pollution Prevention 3, there will be eight MDOT maintenance facilities that will be inspected in 2018. In 2019, an additional three facilities will be inspected and in 2020, the remaining six facilities will be inspected. The findings of these inspections will be given to the Stormwater Program Manager and any recommendations will be addressed. At the end of the five year permit cycle, each maintenance facility will have been inspected.

The objective for Activity Pollution Prevention 4 is to provide for continued street sweeping and catch basin cleanout, following maintenance performance guidelines.

REFERENCES

MDOT, 2016. Stormwater Management Plan. Michigan Department of Transportation.

Appendix A – Public Education Activities

ACTIVITY EDUCATION 1: CONVERT LANSING INFORMATION CENTER TO WEB-BASED STORMWATER LIBRARY

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMNISTRATION1: Program Assessment and Reporting · EDUCATION 2: Update MDOT Public Website

OBJECTIVE

Convert the current physical information center to a web based archive containing stormwater-related materials for training and educating the job-related public including video, reference manuals and publications.

DESCRIPTION

Converting the existing, physical library to an online archive will increase ease of accessibility for MDOT employees and the job-related public. The library is to be comprised of informational materials to support activities performed for the MDOT Stormwater Management Plan.

ANNUAL REPORTING

- Complete conversion from physical to web-based library
- Track the web page traffic and number of content downloads

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
The existing, physical stormwater library housed in Lansing will be converted to an online database, available on the MDOT Stormwater Website.	Materials transferred to the online, public website by year 2020.
Annual Assessment: This activity will be a focus for 2018-2020.	
A list of stormwater-related materials will be updated quarterly on the MDOT Stormwater Public Web Site.	List of updates provided quarterly to the region stormwater and IDEP coordinators
Annual Assessment: Added the 2016 annual report to the MDOT stormwater webpage. Stormwater contacts were updated to reflect staffing changes in 2017.	
Quarterly notices will be made in the Monday Memo to advertise the stormwater-related library material.	Number of “Monday Memo” articles issued relating to the stormwater program.
Annual Assessment: There were no notices posted in the “Monday Memo” regarding webpage updates.	
MDOT Staff to participate in the Southeast Michigan Green Infrastructure (GI) team in order to share relevant information to the job-related public via the MDOT Stormwater Public Website.	Staff participating in the team will provide materials to be posted on the MDOT Stormwater Public Website to the Aquatic Resource Specialist quarterly

Annual Assessment: MDOT participated with SEMCOG in a domestic scan on national stormwater best management practices. Several other states participated in the scan. MDOT staff participated in several green infrastructure meetings with SEMCOG, attended the Water Resources Task Force meeting, and their climate and flooding study request for proposal. All of these groups are on-going and there hasn't been any formal results to publish on MDOT's website.

ACTIVITY EDUCATION 2: UPDATE WATERSHED STEWARDSHIP INFORMATION ON MDOT PUBLIC WEBSITE

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 1: Lansing Information Center Conversion

OBJECTIVE

Information pertaining to watershed stewardship currently available that is pertinent to the general, traveling public will be maintained and kept available for public use and access. Information to be updated quarterly will focus on job-related activities specific to MDOT employees. A comment form will also be developed to provide feedback on the website and available information.

DESCRIPTION

MDOT will update the public information website about the Phase II stormwater program. The website provides general information about watershed stewardship practices as well as links to pertinent stormwater-related materials. This information will be maintained and monitored to report website usage. Updated information will focus on job-related activities relevant to MDOT.

ANNUAL REPORTING

- Track internal and external website traffic
- Track number of SWMP document downloads on the MDOT stormwater public website.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
The MDOT Stormwater Public Web Site will be updated quarterly with the most recent MDOT stormwater information and news relevant to the job-related and traveling public.	Updates to be tracked by the Stormwater Program Manager.
Annual Assessment: The MDOT public stormwater page contacts section was updated in 2016 to reflect changes in staffing that deal with stormwater related issues. It contains current contact information for the stormwater program manager, support staff, as well as the region stormwater and IDEP coordinators.	
A stormwater-related contact will be developed for inclusion on the MDOT Stormwater Public Web Site.	Contact will appear on the MDOT Stormwater Website and be forwarded to the Stormwater Program Manager.
Annual Assessment: See above comment.	
Comments received via contact link will be reviewed and addressed, as necessary. The comments will be archived to track the change in public awareness and behavior resulting from the implementation of the Public Education Program.	Comments will be addressed as necessary as determined by the Technology Manager and the Stormwater Program Manager
Annual Assessment: An email address was created in 2016 to allow for public comment and questions regarding the MDOT stormwater program on the contacts page. To date, there have been no public inquiries.	

ACTIVITY EDUCATION 3: UPDATE STORMWATER MANAGEMENT BROCHURES

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 2: MDOT Stormwater Website

OBJECTIVE

Further the public knowledge on stormwater and how MDOT manages stormwater through informative brochures.

DESCRIPTION

Informative brochures currently exist on MDOT's Stormwater website and are also distributed at events such as job fairs and various community outreach events. These brochures will be updated to contain up to date information about stormwater management.

ANNUAL REPORTING

- Track completion of brochure updates
- Track number of downloads from website

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review and update existing brochures relating to stormwater management.	To be posted on the MDOT stormwater website.
Annual Assessment: This will be a goal for 2018.	
Continue to distribute brochure materials at community events, job fairs, and other relevant events.	To be distributed at various event.
Annual Assessment: These materials are distributed at events, as applicable.	

ACTIVITY EDUCATION 4: REVIEW EDUCATION MATERIALS DISTRIBUTED WITH TAP-IN/DISCHARGE PERMIT APPLICATIONS AND UPDATE/DEVELOP TRACKING SYSTEM FOR TAP-IN PERMITS

MONITORING YEAR: 2017

Minimum Control Measure : Education/Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment & Reporting · IDEP 4: Procedure for Receiving & Notifying MDEQ of Illicit Discharges & Actions Taken

OBJECTIVE

Education materials inform applicants of acceptable discharges into the MDOT drainage system, and also of the potential negative impacts to water quality from unacceptable or illegal discharges and ways to mitigate these impacts. A tracking system will enable MDOT to keep better track of those who have tap-in permits.

DESCRIPTION

Preparing education materials for typical development activities connecting to MDOT facilities. Established and implemented procedures for distributing these materials.

ANNUAL REPORTING

· Track quantity of permit applications/educational materials distributed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review educational materials included in the tap-in/discharge permit application.	Items that need to be improved, as determined by the review process, will be given to the permit workgroup.
Annual Assessment: This will be a focus for 2018.	
Incorporate review comments into education materials included in the tap-in/discharge permit application.	Updated materials will be distributed to the new permit applicants.
Annual Assessment: This will be a focus for 2018.	
Distribute education materials to 100% of tap-in/discharge permit applicants.	MDOT Permitting Staff to follow up with applicants to ensure information was received.
Annual Assessment: Educational materials were distributed for all tap-in discharge permits in 2017 and will continue to be distributed throughout the permit cycle. There were 65 tap-in discharge permits 2017. The breakdown of these numbers by region are available in the figure on the following page.	
Review the adequacy of the procedure for distributing materials.	MDOT Permitting Staff to meet with MDOT Stormwater Staff to discuss necessary changes to education materials distributed to permit applicants.
Annual Assessment: This will be a focus for 2018 through the end of the permit cycle.	

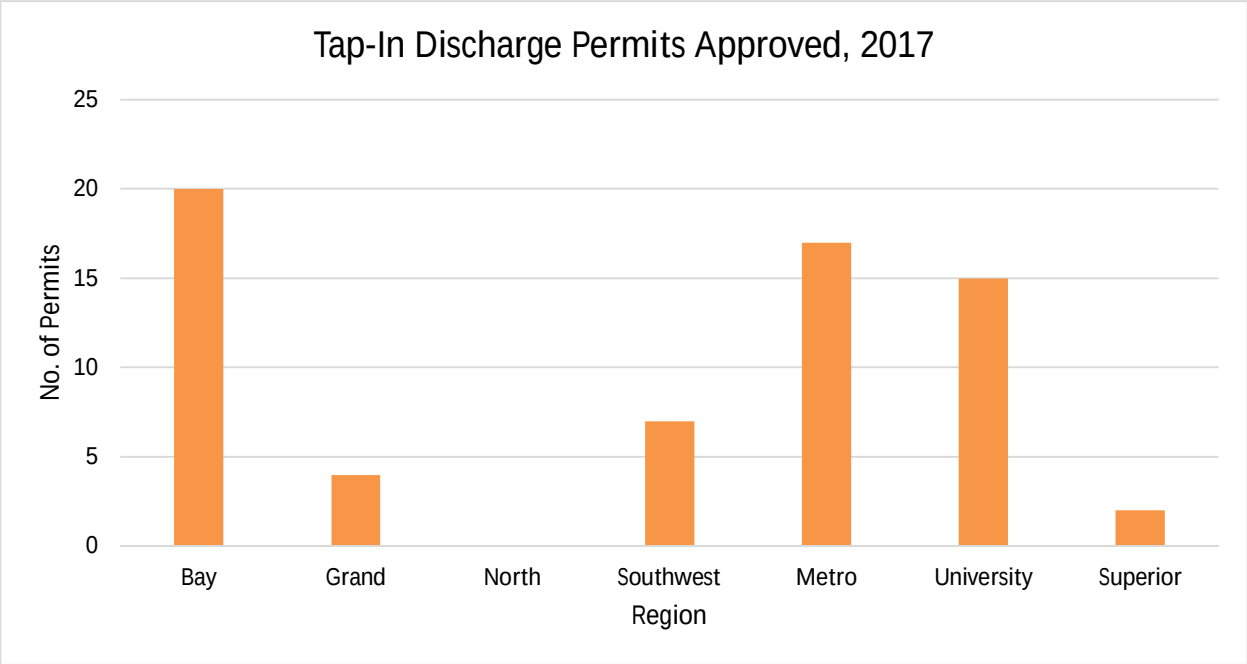


Figure A1 – 2017 Tap-In Permits Issued By Region

ACTIVITY EDUCATION 5: UPDATE EXISTING MODULES AND DEVELOP MS4 TRAINING MODULE FOR DESIGNERS

MONITORING YEAR: 2017

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 4: Notify MDEQ of Illicit Discharges

OBJECTIVE

Educate the job-related public about the Stormwater Management Program, focusing on design.

DESCRIPTION

Use the four 15 minute MDOT stormwater program training modules to train Lansing and Region/TSC staff and contract agencies.

- Module One: Introduction to SW Management
- Module Two: Best Management Practices
- Module Three: Maintenance Considerations
- Module Four: Illicit Discharge & Maintenance
- A new module on MS4's for all MDOT staff

ANNUAL REPORTING

- Track training attendance.
- Track contract agencies receiving modules.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review and update modules to pertain up to date information relevant for designers. Once updated, modules will be added to the MDOT training database (On-Track) to track individual employee training. Training completion shall be included in employee performance evaluations. The first update will add illicit discharge reporting and notification information to Training Module Four.	Modules to be updated annually and confirmed by the MDOT Stormwater Program Manager
Annual Assessment: In 2016, a Municipal Separate Storm Sewer System (MS4) training module was developed. This module was created as an overview of MS4's, how MDOT complies with MS4 requirements, and guidance for designers on stormwater management. Creating this module was the first step for MDOT in developing updated versions of existing training modules and feedback on this module will be considered in development of these other modules, as well. No additional modules were completed in 2017. In the future, the remainder of the training modules will be reviewed and updated, if necessary.	
Determine specifically who will be trained with the stormwater modules. All new employees shall be trained within the first year. All staff shall be trained once per permit cycle. Maintenance and construction staff with stormwater responsibilities will be trained to follow the illicit discharge notification procedure with the MS4 Training Module.	List of trained employees reported by the MDOT training coordinator to Stormwater Program Manager

Annual Assessment: The MS-4 Training module was completed in December of 2016 and made available on the department's intranet site. A total of 307 individuals from MDOT viewed the module in 2017. Overall, the module had 656 views in 2017.	
Provide modules to contract agencies and contracting associations with a request to use the modules. Provide information through the Michigan Local Technical Assistance Program (LTAP).	Modules given to contract agencies on an as needed basis.
Annual Assessment: No agency requests have been reported for 2017.	

ACTIVITY EDUCATION 6: CERTIFY MDOT'S STAFF FOR PESTICIDE/FERTILIZER APPLICATIONS

MONITORING YEAR: 2017

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

To reduce pollution entering waters of the state, statewide, that originates from pesticide and/or fertilizer applications.

DESCRIPTION

The existing training and certification program for pesticide/fertilizer applications will be evaluated and tracked to document performance and to prevent stormwater pollution. A turf grass management plan and soil testing for nutrients to determine appropriate fertilizer usage shall be added to the existing training. Results will be used to recommend changes if appropriate.

ANNUAL REPORTING

- Track the number of individuals attending annual pesticide training.
- Track number of MDOT personnel certified as a pesticide applicator.
- Summarize evaluation and review of programs, policies, procedures and information.
- Report changes to fertilizer specifications.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff applying pesticides will be trained and certified per Michigan Department of Agriculture requirements. Staff are responsible for ensuring their certification is completed every three years and they have appropriate certification documents.	List of trained employees will be provided by the MDOT training coordinator to the Stormwater Program Manager by the TSC Region offices.
Annual Assessment: All MDOT staff that apply fertilizer or pesticides attend a training, which is offered each year. Staff must attend training every three years to maintain their certification. In 2017, there were 73 MDOT staff members who attended the pesticide and fertilizer training. See the figure on the following page for a breakdown of these staff members by region.	
MDOT Staff or Contract Agencies will follow MDOT's Standard Specifications for Construction, Sections 816 and 917 for fertilizer application practices.	Verified by MDOT Stormwater Program Manager.
Annual Assessment: This specification is a focus of the MDOT fertilizer and pesticide application training. In 2017, staff and agencies were in compliance with these specifications.	
Evaluate application practices and pollution prevention measures and recommend and formalize any changes if appropriate.	A task to be completed annually, as checked by the Stormwater Program Manager.
Annual Assessment: This effort will be a focus for 2018.	

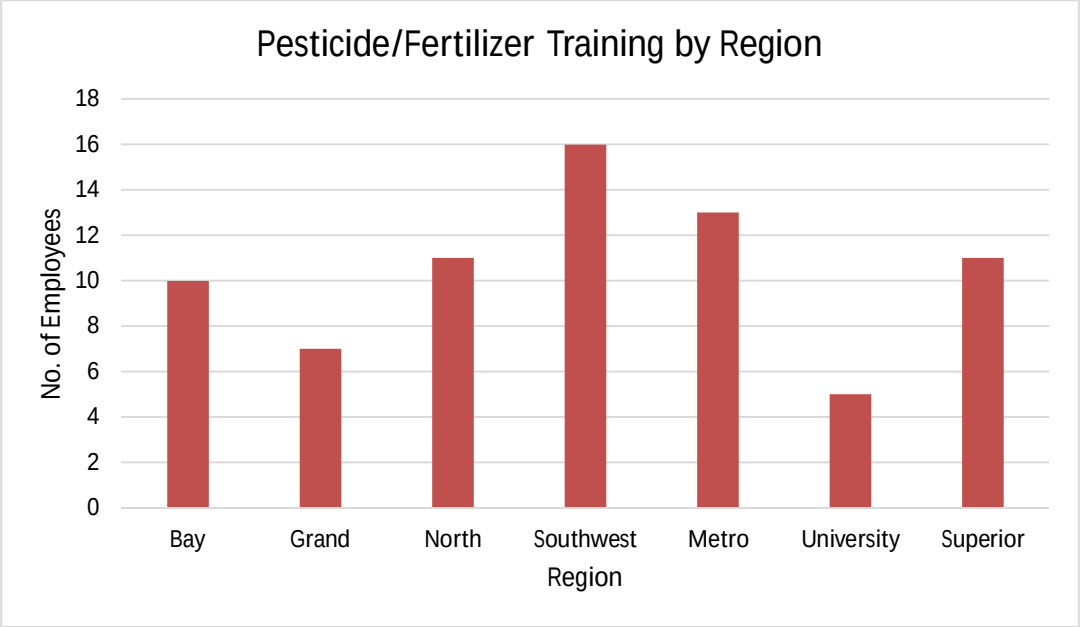


Figure A2 – 2017 Pesticide Training By Region

ACTIVITY EDUCATION 7: TRAIN STAFF RESPONSIBLE FOR ADMINISTERING PART 91 AND STORMWATER OPERATORS

MONITORING YEAR: 2017

Minimum Control Measure : Training Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control

OBJECTIVE

To reduce non-stormwater discharges to the MEP to receiving water bodies.

DESCRIPTION

The existing MDEQ sponsored Soil Erosion and Sedimentation Control (SESC) training program will be attended by appropriate maintenance staff. Successful completion of the training and certification of stormwater operators will be documented.

ANNUAL REPORTING

· Track total number of staff trained and certified for compliance with Part 31 and Part 91 requirements.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff Responsible for Administering Part 91 and those having Decision Making Authority for SESC Plan Development or Review, Inspections, or Enforcement will receive NPDES training.	The number of trained staff reported annually to the Stormwater Program Manager

Annual Assessment:

Number of MDOT staff trained, by region:

Bay – 38 SESC, 10 pesticide/herbicide
Grand – 7 pesticide/herbicide, 19 Stormwater Operators
Metro – 27 SESC, 13 pesticide/herbicide, 36 C&T Training, 36 Environmental Awareness Training for Garages & Labs
North – 4 SESC, 11 pesticide/herbicide
Superior – 11 pesticide/herbicide
Southwest – 16 pesticide/herbicide
University – 17 Hazardous & Polluting Materials Awareness, 5 pesticide/herbicide

Appendix B – Public Involvement and Participation Activities

ACTIVITY PUBLIC INVOLVEMENT 1: POST STORMWATER MANAGEMENT PLAN (SWMP) ON MDOT'S PUBLIC STORMWATER WEBSITE AND DEVELOP COMMENT FORUM

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · EDUCATION 1: Convert Lansing Information Center to Web-Based Stormwater Website

OBJECTIVE

To obtain statewide comments from the public on the SWMP.

DESCRIPTION

Establish procedures for the public notice and distribution of the draft SWMP. Provide at least 30 days for public review and comment.

ANNUAL REPORTING

- Track number of public comments
- Track number of downloads of the draft SWMP from MDOT Stormwater website.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Post draft SWMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: Draft will be posted on the MDOT Stormwater Website in the spring/summer of 2018.	
Distribute draft SWMP to all TSCs and Region Offices.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: The draft is to be distributed to the TSC and Region Offices during the spring/summer of 2018.	
Develop comment forum for general public to comment on publicly posted SWMP.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: A public comment forum on the MDOT Stormwater Website will be created once the draft SWMP is posted on the MDOT Stormwater Website.	
Distribute SWMP to watershed and environmental organizations listed in **Appendix E** of the SWMP.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: Once the SWMP is posted on the MDOT Stormwater Website, the organizations listed in **Appendix E** of the SWMP will be notified of its posting.	
Distribute SWMP to planning organizations state-wide that are involved with transportation planning efforts.	Comment on in Annual Report.
Annual Assessment: Once the SWMP is posted on the MDOT Stormwater Website, it will be distributed to these organizations.	

Report and respond to public comments on SWMP.	Relevant comments to be incorporated into final version of SWMP. All comments compiled in SWMP **Appendix F**.
Annual Assessment: As comments on the SWMP are given, they will be documented and responded to through the end of 2018.	
Post final SWMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
Annual Assessment: The final SWMP will be posted on the MDOT Stormwater Website after receipt of the NPDES permit.	

ACTIVITY PUBLIC INVOLVEMENT 2: DEVELOPMENT OF OFFSET PROGRAM INCLUDING PARTNERING WITH OTHER STATE AGENCIES, DRAIN COMMISSIONERS, AND MUNICIPALITES

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

To expand outreach activities and gain partners to better the management of stormwater by adopting existing stormwater management practices in the state of Michigan and for off-site mitigation for redevelopment projects that cannot meet 100 percent of the performance standards.

DESCRIPTION

MDOT will encourage the partnership with other state agencies, drain commissioners and municipalities, as appropriate, in order to better the management of stormwater and maintain the vitality of Michigan's surface waters.

ANNUAL REPORTING

· List of agencies that have agreed to a partnership, or may be interested in the future.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop list of organizations to reach out to by November 2019.	List included in Annual Report.
Annual Assessment: This measurable goal will be a focus for the year 2019. This list will be included in the 2019 Annual Report.	
Develop process for establishing partnerships. SEMCOG partnership to be used as a pilot program.	Standard procedure developed & distributed to appropriate persons by Stormwater Program Manager.
Annual Assessment: This measurable goal is a focus for the year 2019 and will be included in the 2019 Annual Report.	

ACTIVITY PUBLIC INVOLVEMENT 3: IDENTIFY AND COORDINATE WITH MPOs HAVING A SWMP

MONITORING YEAR: 2017

Minimum Control Measure : Education/ Outreach **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 3: Procedure to Select and Apply BMPs · POST CONSTRUCTION 6: Periodically Update Drainage Manual

OBJECTIVE

To identify and coordinate, statewide, with MPOs having stormwater quality control programs to properly handle stormwater management issues during construction and maintenance activities.

DESCRIPTION

Further improve the management of stormwater by collaborating with MPOs during early coordination efforts of MDOT projects. The purpose of these efforts will be to inform and comply with local planning efforts and watershed goals.

ANNUAL REPORTING

- Track the major action environmental documents (environmental assessments and environmental impact statements) distributed to watershed groups for their comments.
- Track responses from watersheds and environmental groups concerning areas of concern.
- Track any early coordination meetings held with watershed and environmental groups including whether groups attend a public meeting or comment on one of the major action documents.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Consider watershed and environmental group input during early coordination of MDOT transportation projects.	In projects identified as impacting 303(d) listed water bodies or other important surface water features, MDOT will coordinate with local watershed and environmental groups.

Annual Assessment: No projects were identified as impacting 303(d) listed water bodies in 2017. This will be an ongoing measurable goal as projects which impact these water bodies are encountered.

Appendix C – Illicit Discharge Elimination Plan Activities

ACTIVITY IDEP 1: MAINTAIN LIST OF CONSTRUCTION PROJECTS AND MAINTENANCE ACTIVITIES

MONITORING YEAR: 2017

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 2: Update Maps for Outfalls in Urban Area · CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control

OBJECTIVE

To inform interested persons of construction projects and maintenance activities which will include work on the drainage system.

DESCRIPTION

List of construction projects and maintenance activities available to the public through the MDOT website and documented in the Stormwater Annual Report.

ANNUAL REPORTING

· A list of these projects and activities will be made available on the MDOT website.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop a list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year.	List to be given quarterly from TSC and Region Managers to the Stormwater Program Manager

Annual Assessment: The MDOT public website contains 3 links that list construction projects in the state. The links cover MDOT's major road projects, the current construction projects, and future projects covered under MDOT's 5 year plan. The current construction projects are also available using the Mi Drive application.

ACTIVITY IDEP 2: DEVELOP MAPPING SCHEDULE AND UPDATE MAPS FOR OUTFALLS IN URBAN AREAS

MONITORING YEAR: 2017

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Urbanized Area **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 1: Maintain List of Active Construction Projects and Major Maintenance Activities

OBJECTIVE

To develop current outfall maps and schedule for updating in the future.

DESCRIPTION

To develop an annual mapping schedule and complete mapping of outfalls in MDOT right-of-way in urbanized areas including MDOT roads crossing 303(d)-listed water bodies and other non-impaired water bodies. Known outfalls will be mapped based on existing survey maps.

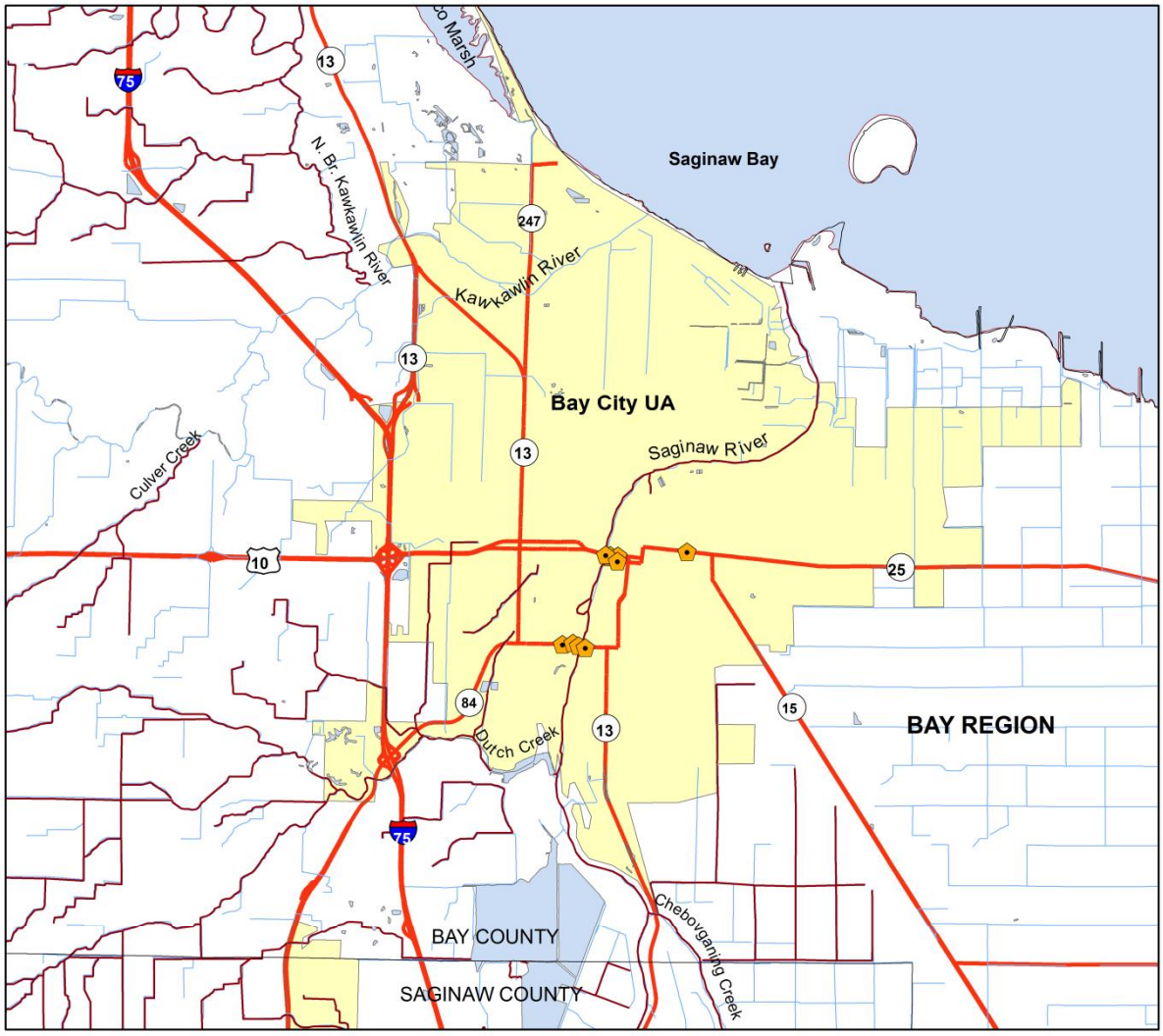
ANNUAL REPORTING

- Track completed maps and updated outfalls
- Report physical location where up-to-date storm sewer system maps are available

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Map outfalls in MDOT right-of-way in urbanized areas.	To be reported annually to the Stormwater Program Manager
Annual Assessment: Maps of outfalls at stream crossings over or within 300 feet of impaired waters of the state within urbanized areas based are on field inspection of top priority outfalls. Maps of outfalls at stream crossings over waters of the state within urbanized areas that are not field screened are based on a GIS analysis.	
Update known outfall maps annually and include in the annual progress report.	Maps given to the Stormwater Program Manager by the consultant annually.
Annual Assessment: Maps created in 2016 are available on the following pages and will be updated throughout the permit cycle as more outfalls are identified.	
MDOT to provide permanent identification for all outfall structures.	ID will be documented and tracked by MDOT Stormwater Program Manager
Annual Assessment: An identification system will be developed in 2018. This system will then be used in subsequent years to easier identify MDOT outfalls.	

Bay City Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library
-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library
-Urbanized Area status is based on 2010 census data.
-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
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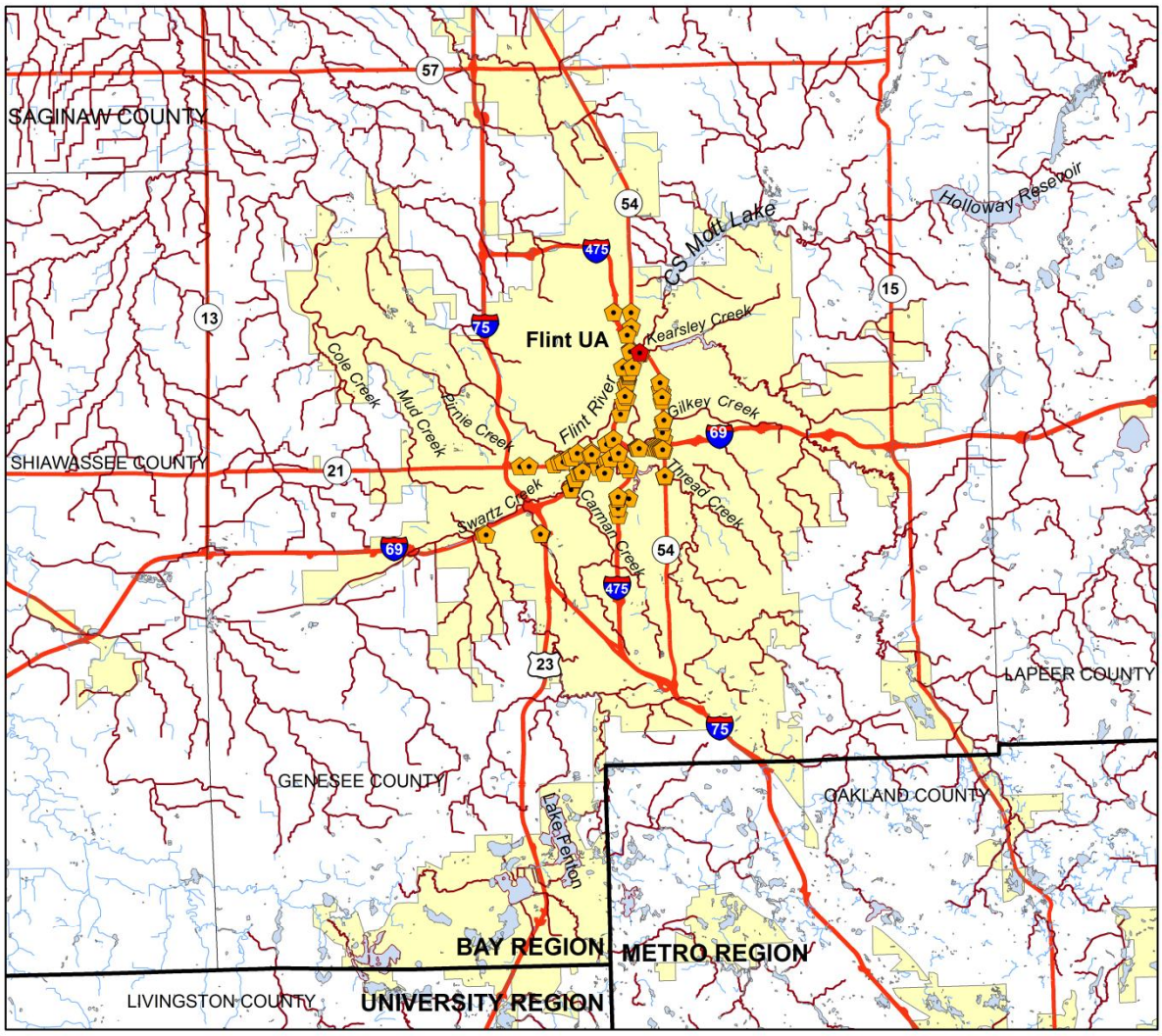
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Flint Urbanized Area



Legend

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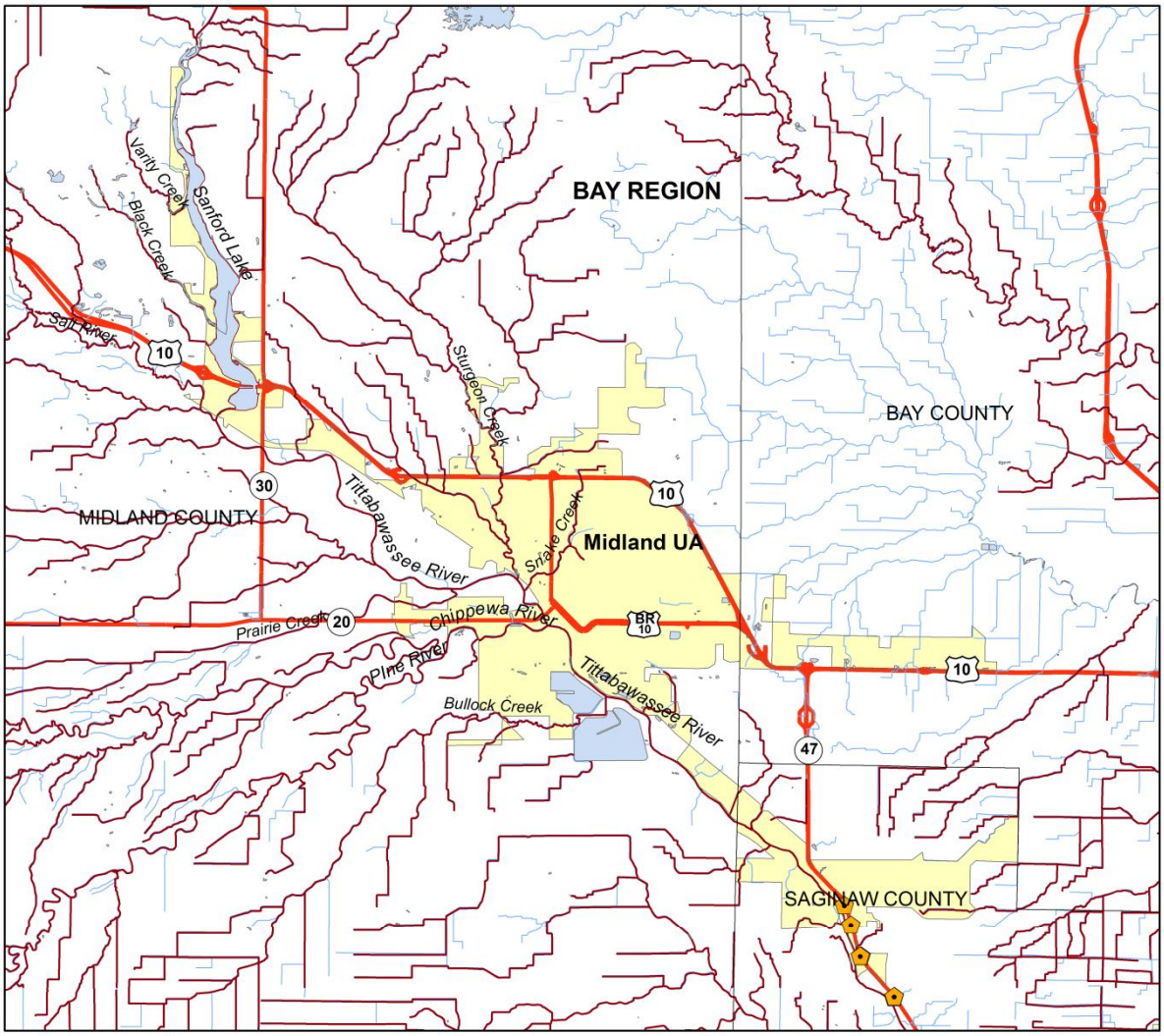
N

0 1.5 3 6 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Midland Urbanized Area



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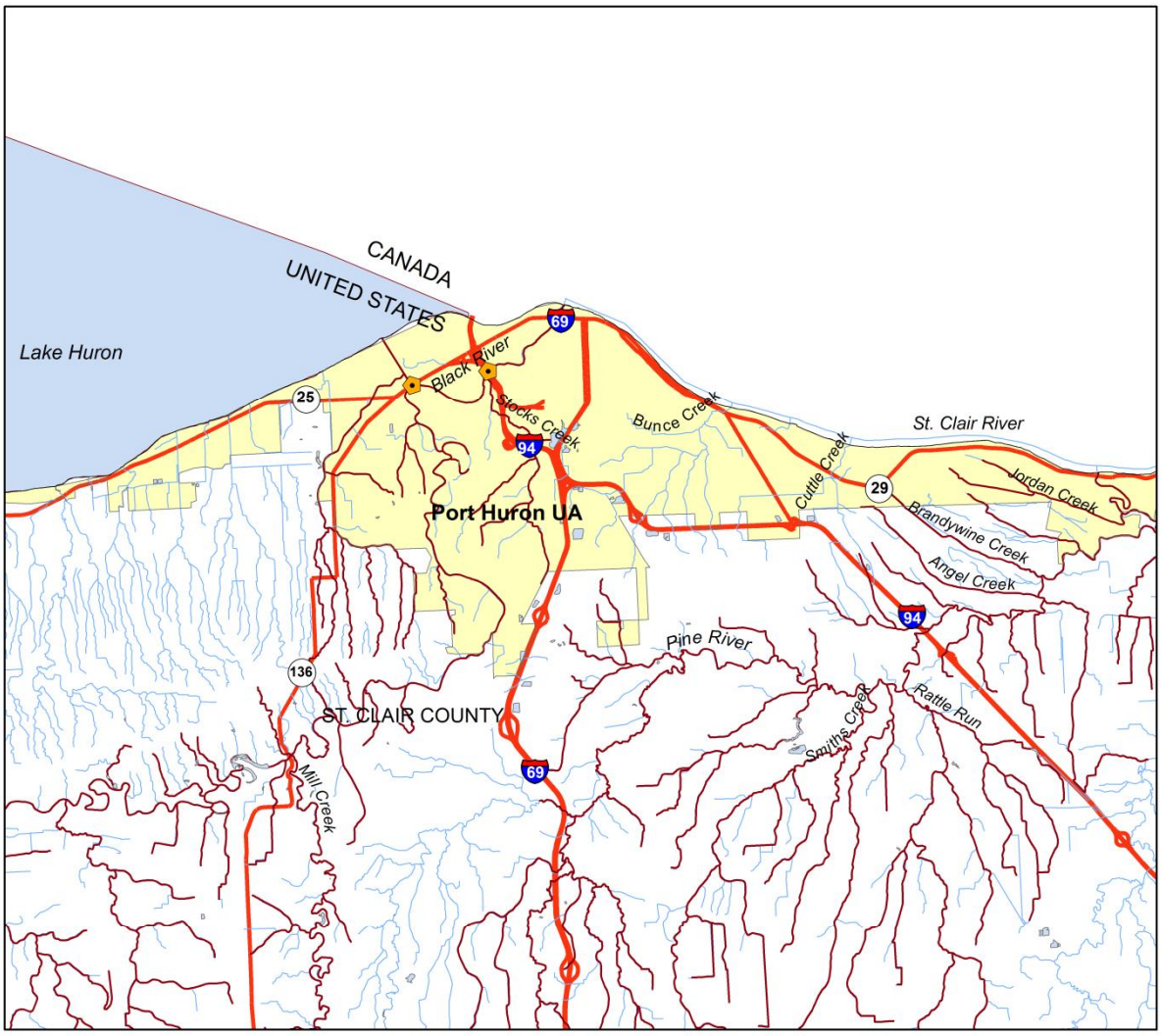
N

0 1.25 2.5 5 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Port Huron Urbanized Area



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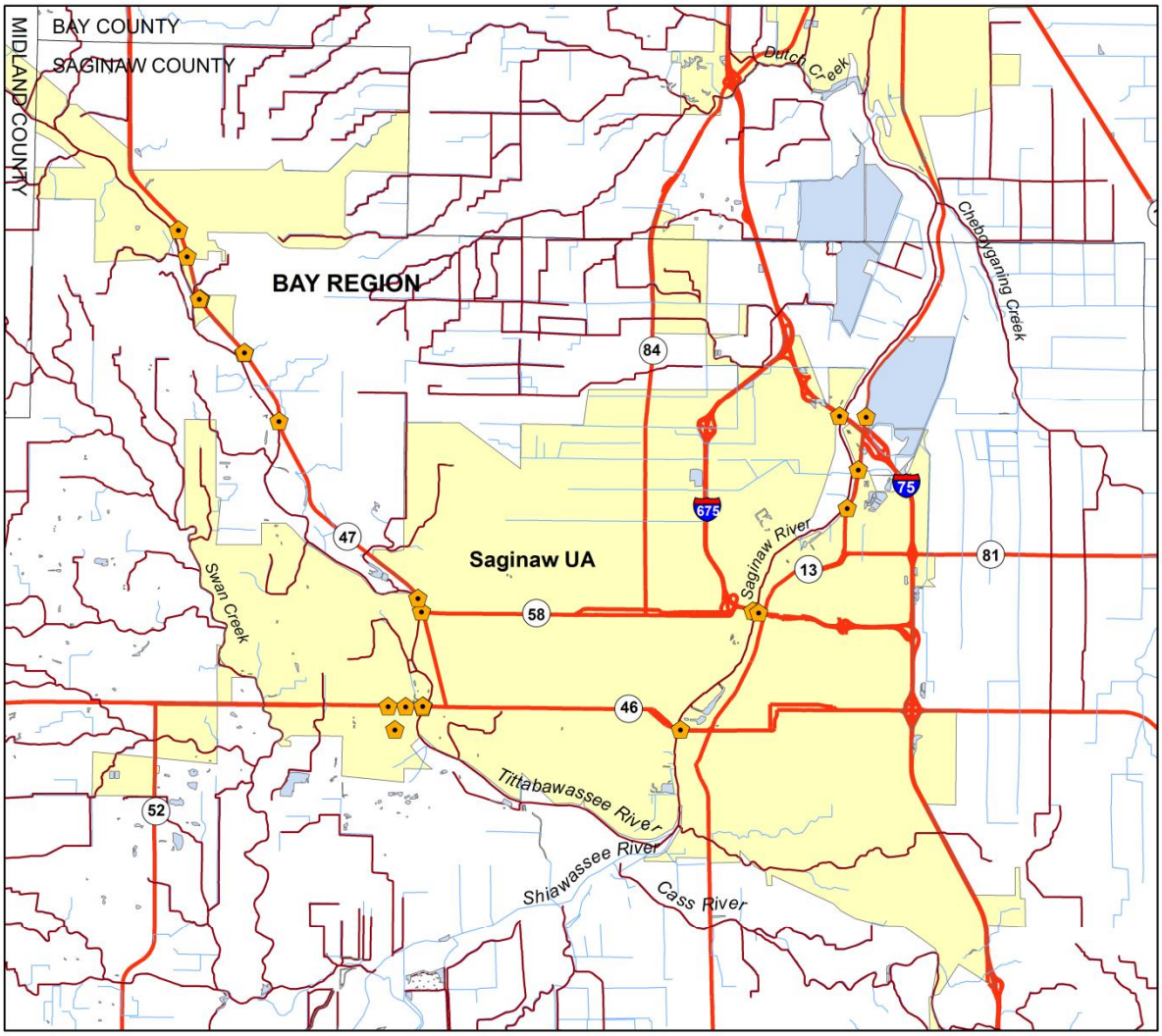
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Saginaw Urbanized Area



Legend

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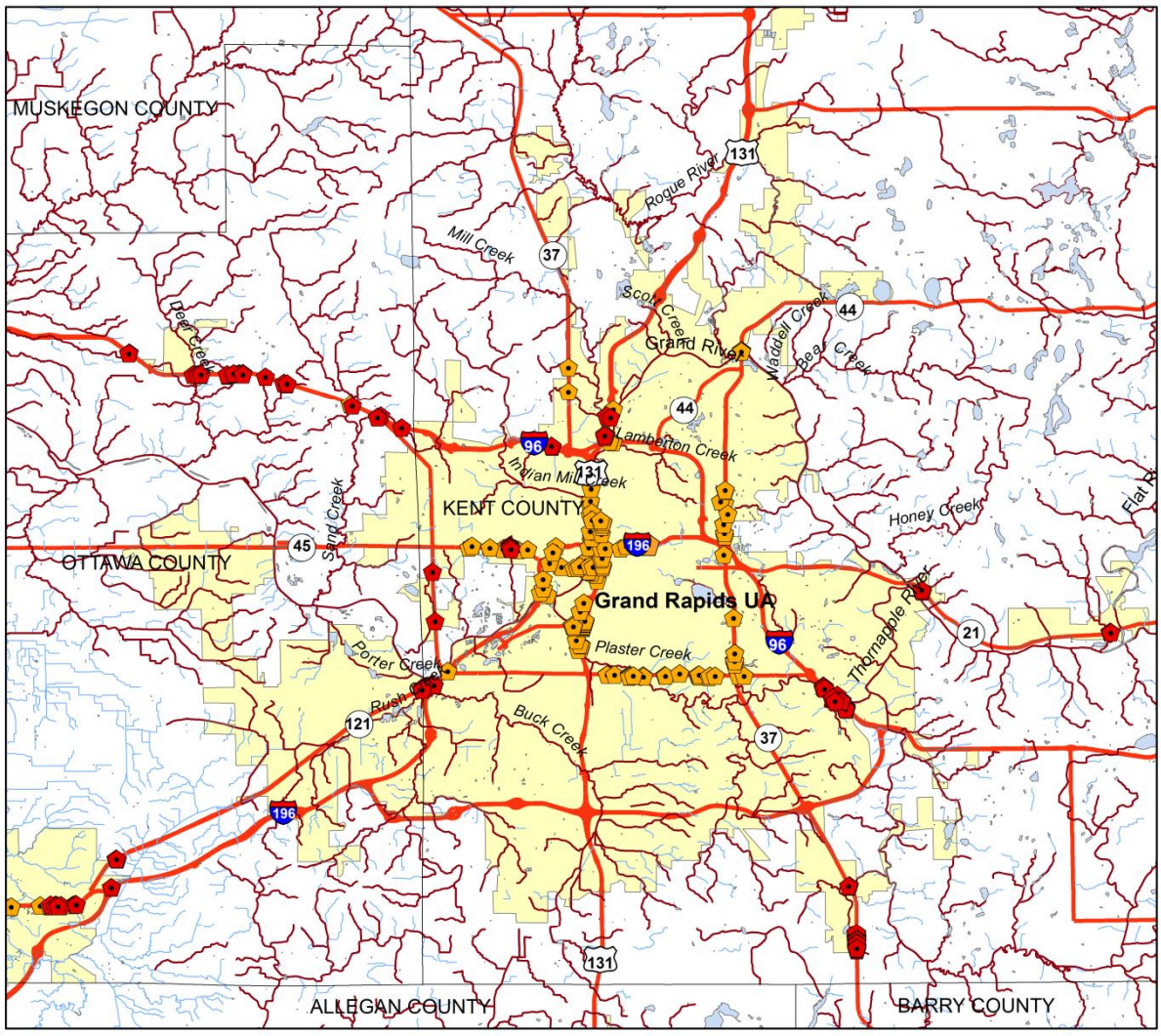
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Grand Rapids Urbanized Area



Legend

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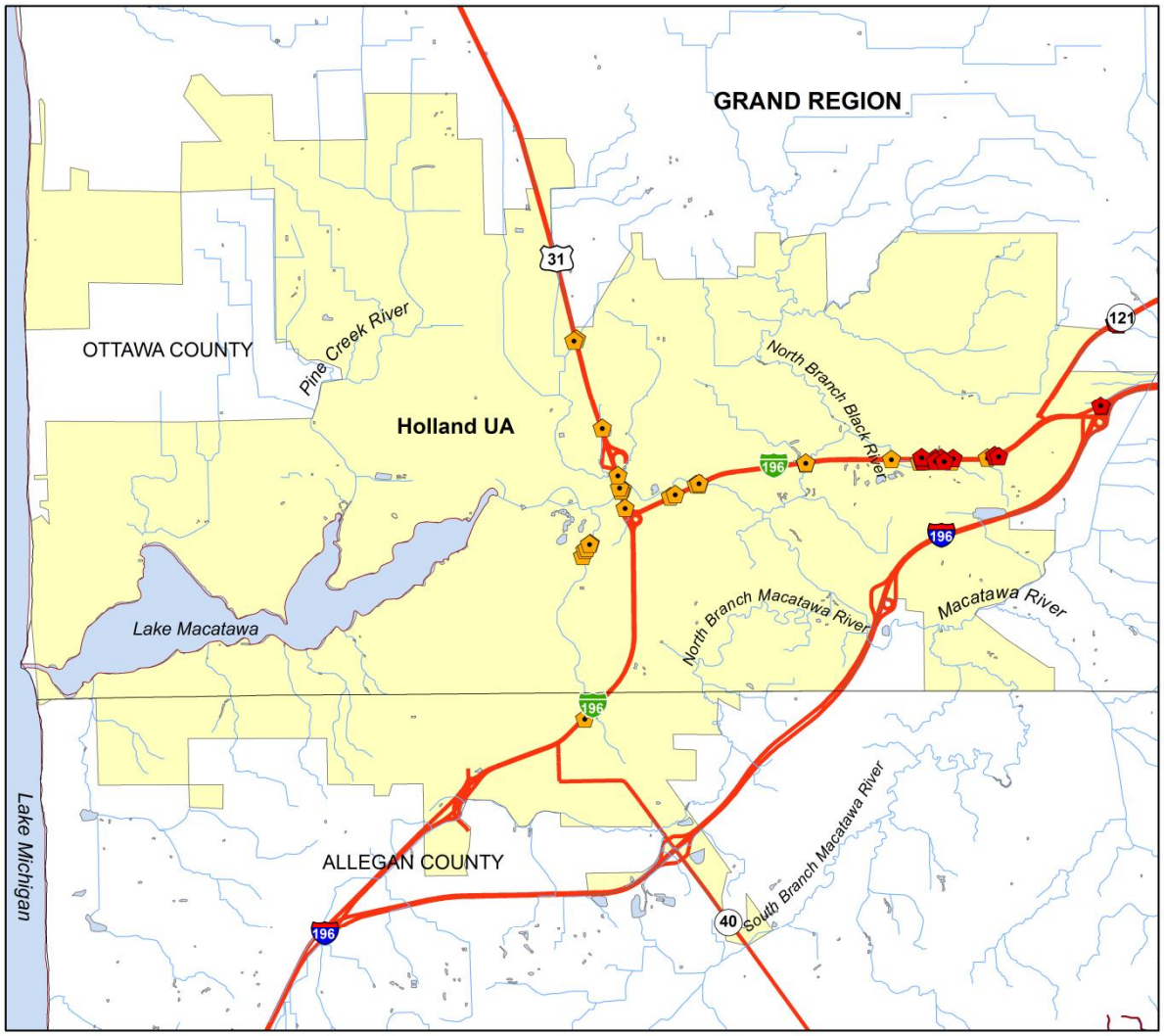
N

0 2 4 8 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Holland Urbanized Area



Legend

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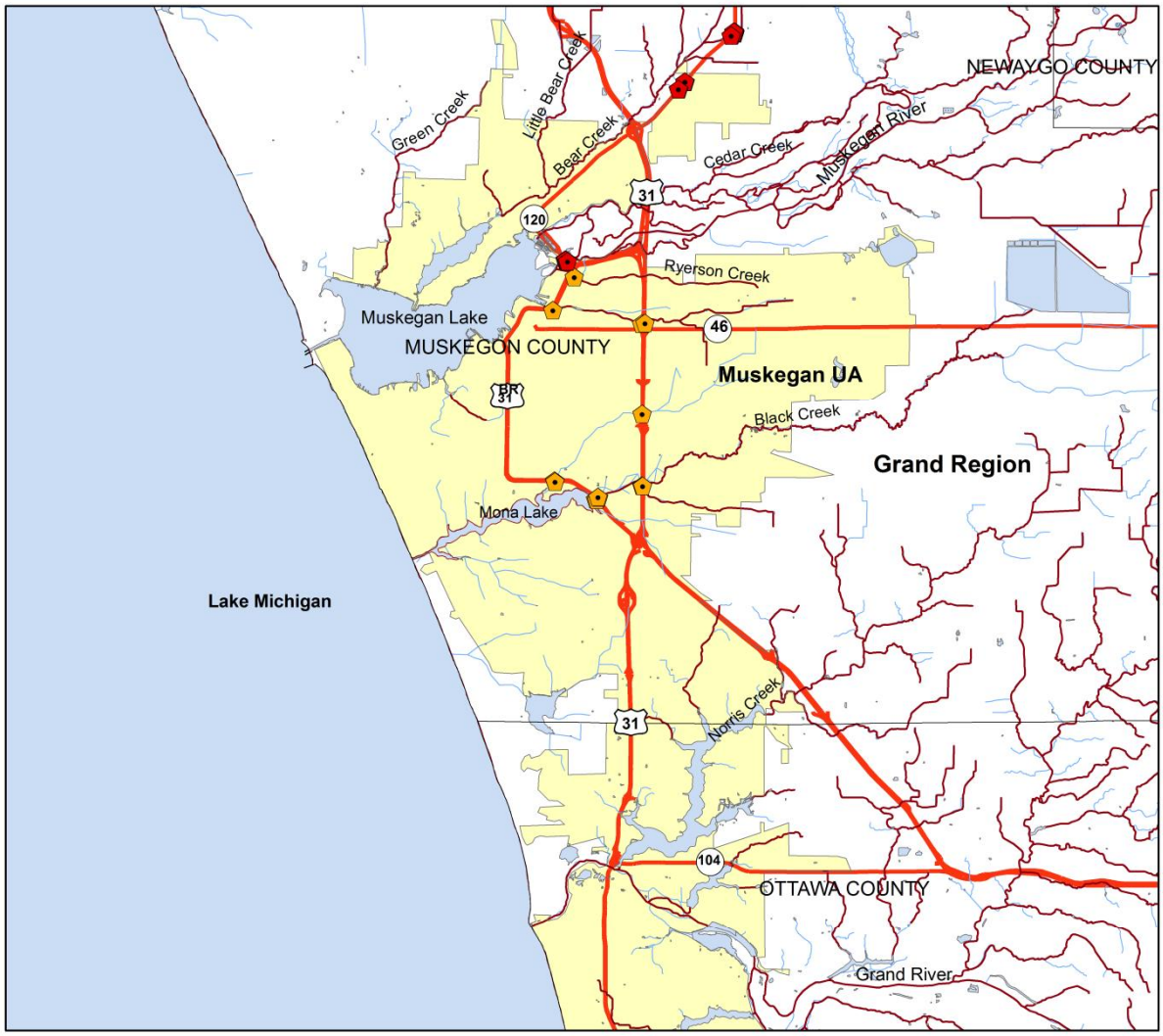
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Muskegon Urbanized Area



Legend

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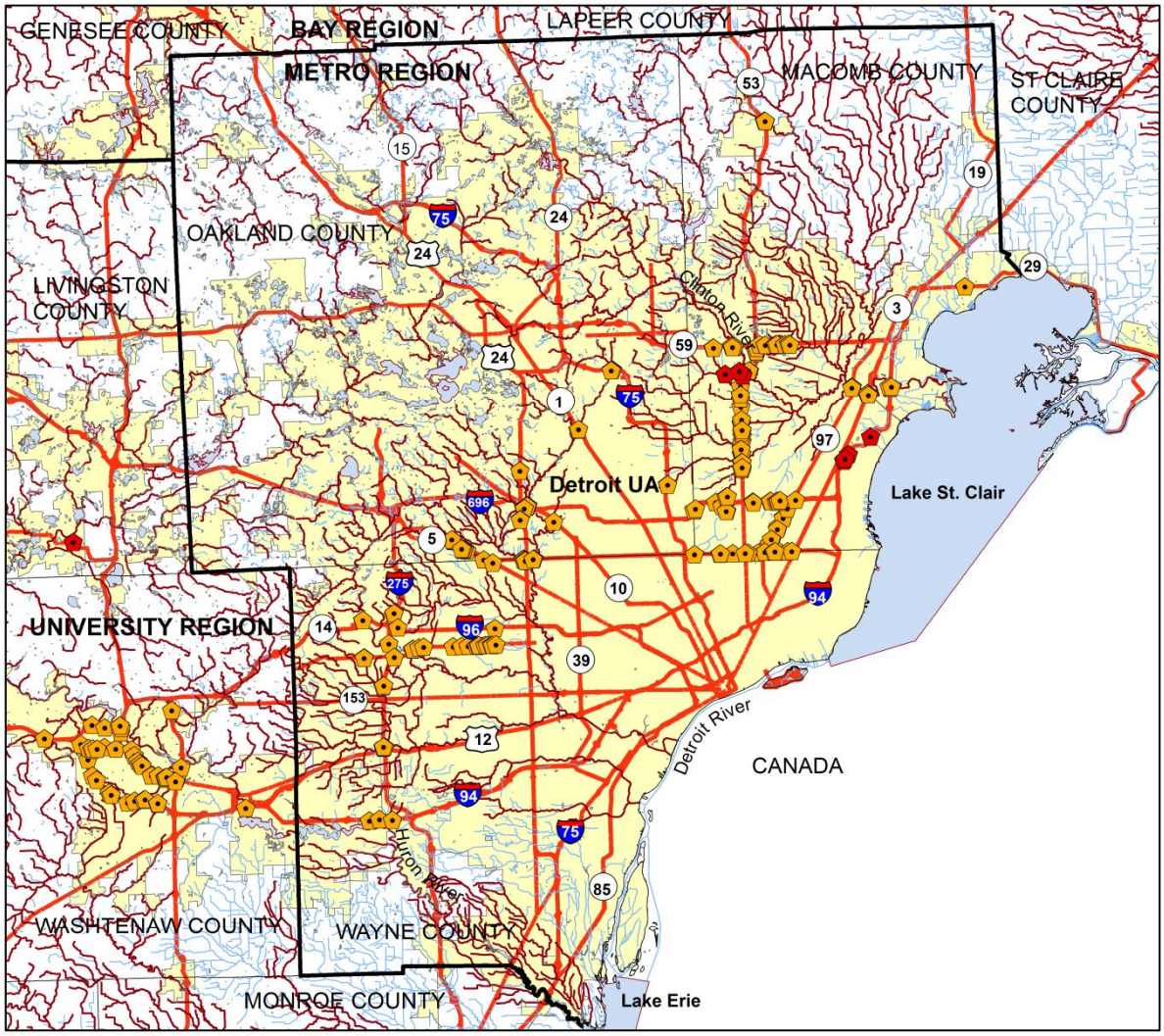
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Detroit Urbanized Area



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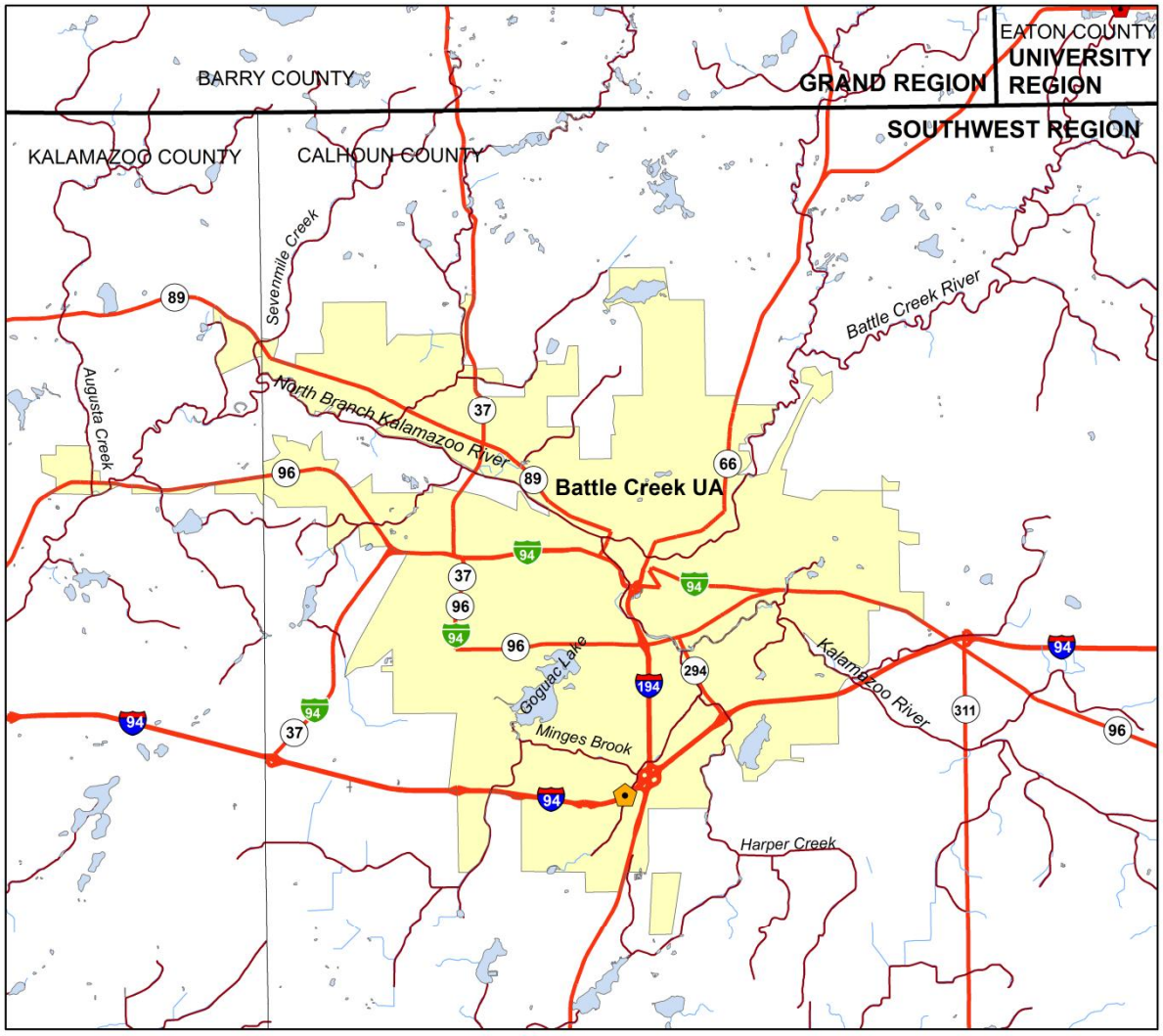
N

0 3.5 7 14 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Battle Creek Urbanized Area



Legend

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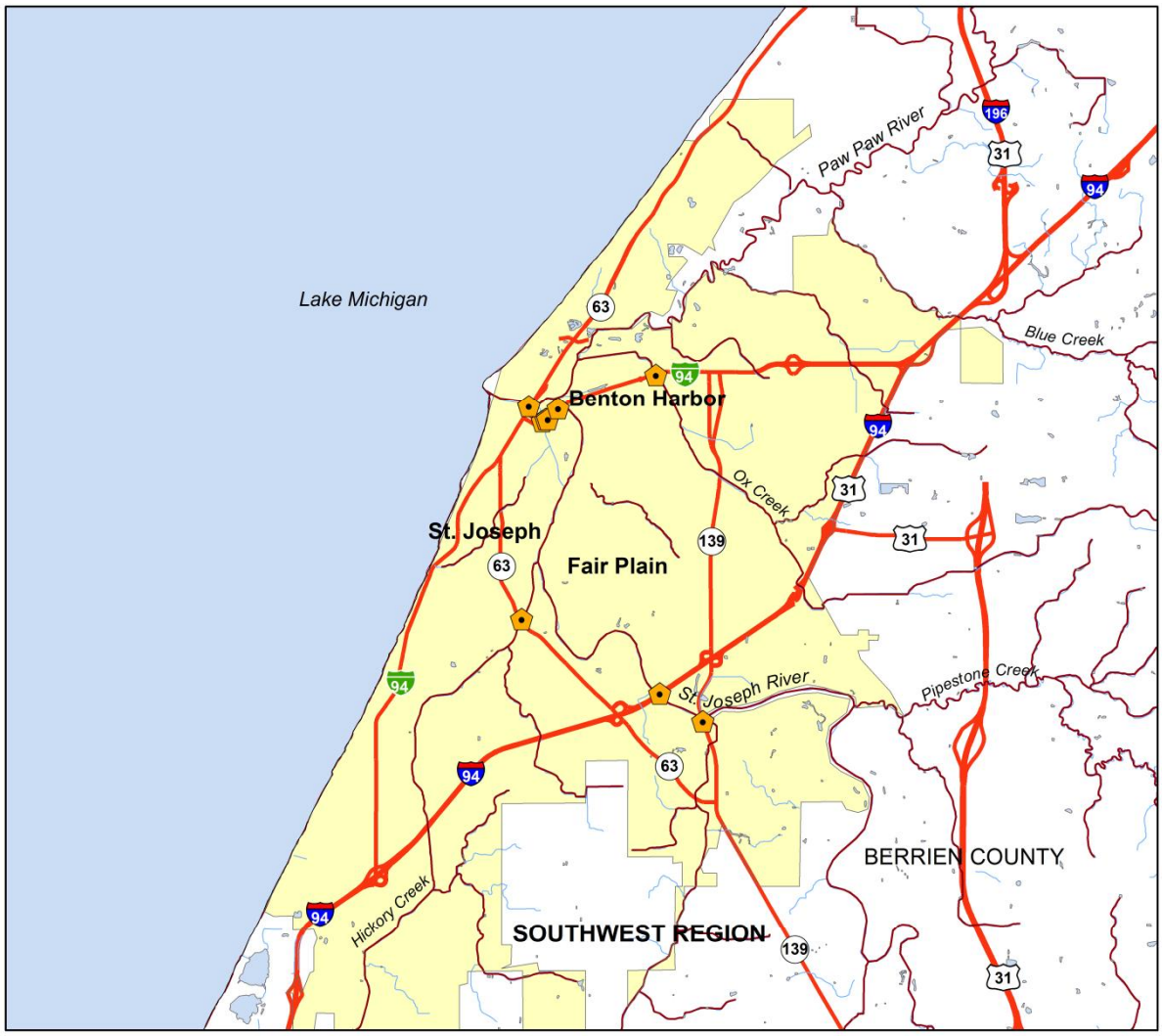
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Benton Harbor-St. Joseph Urbanized Area



Legend

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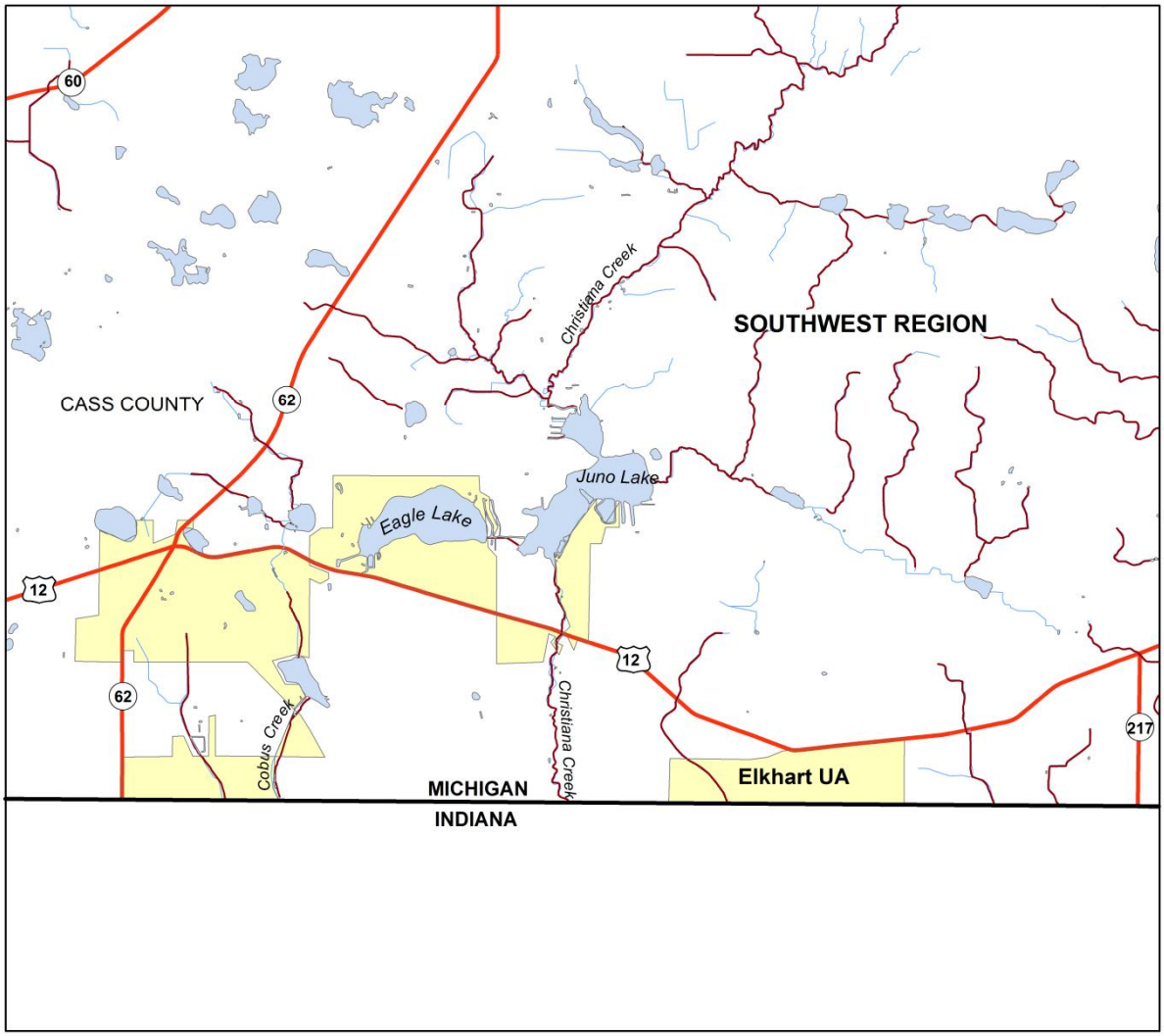
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Elkhart Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area

No IDEP Investigation

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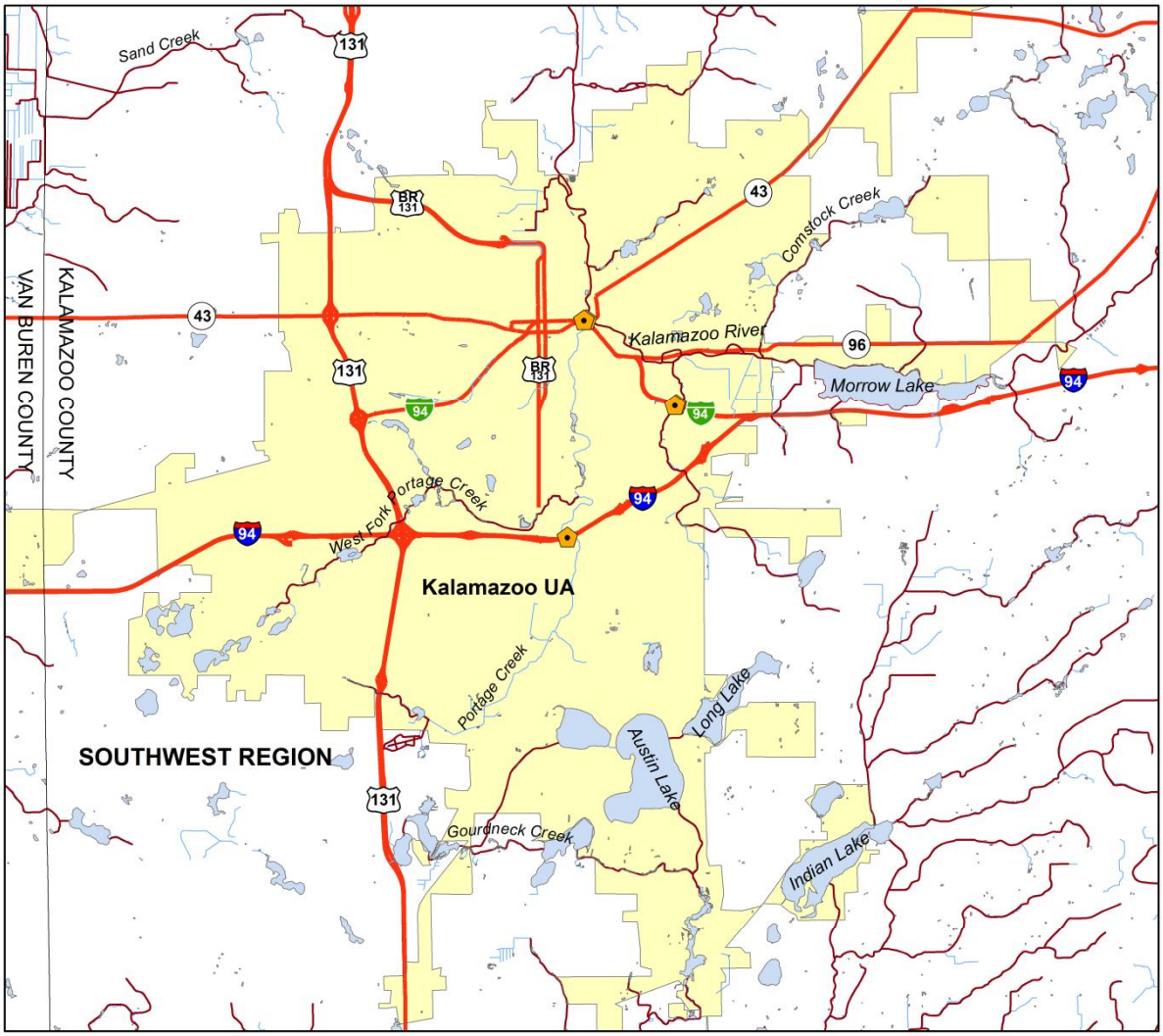
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Kalamazoo Urbanized Area



Legend

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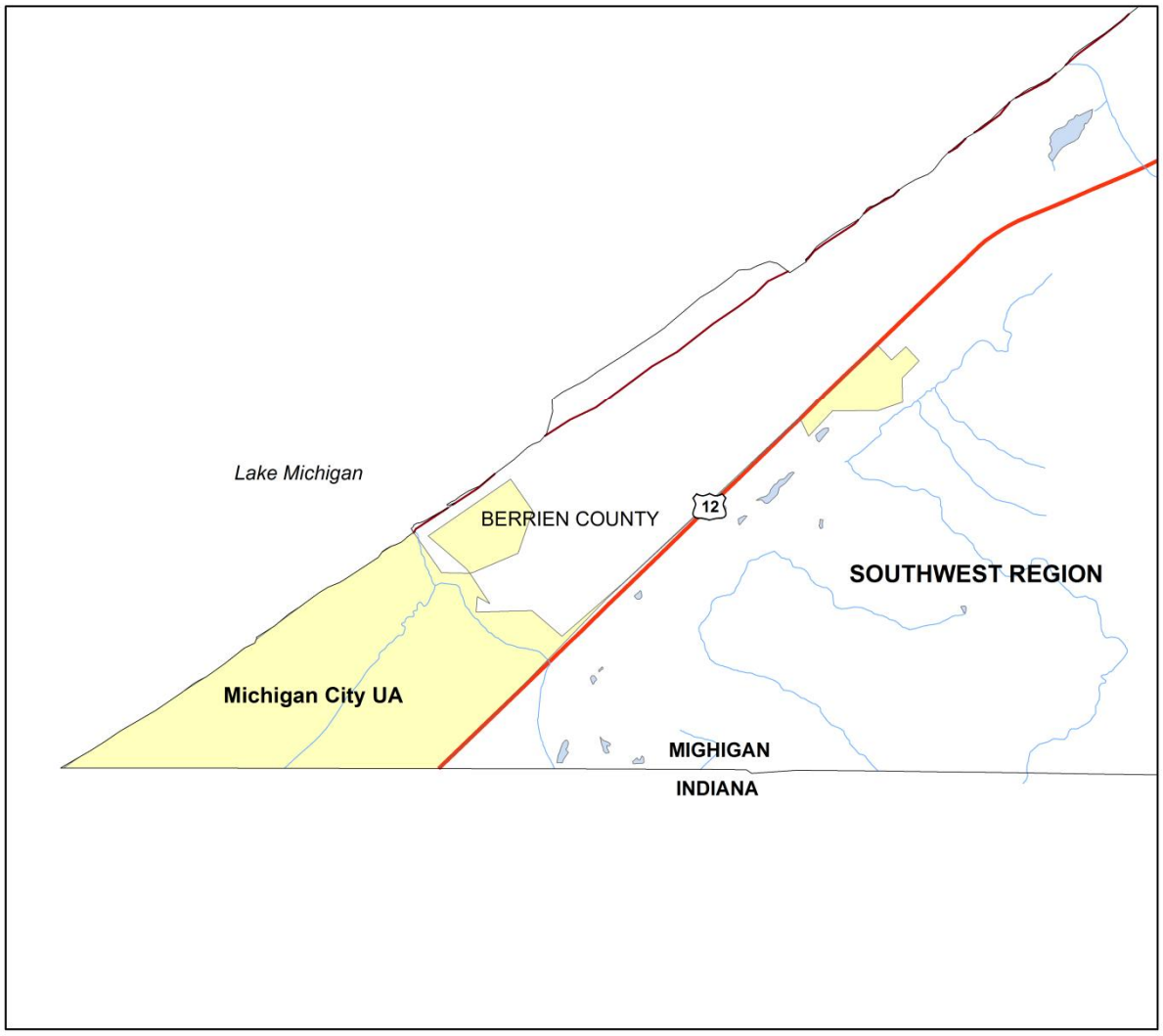
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Michigan City Urbanized Area



Legend

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- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area

No IDEP Investigation

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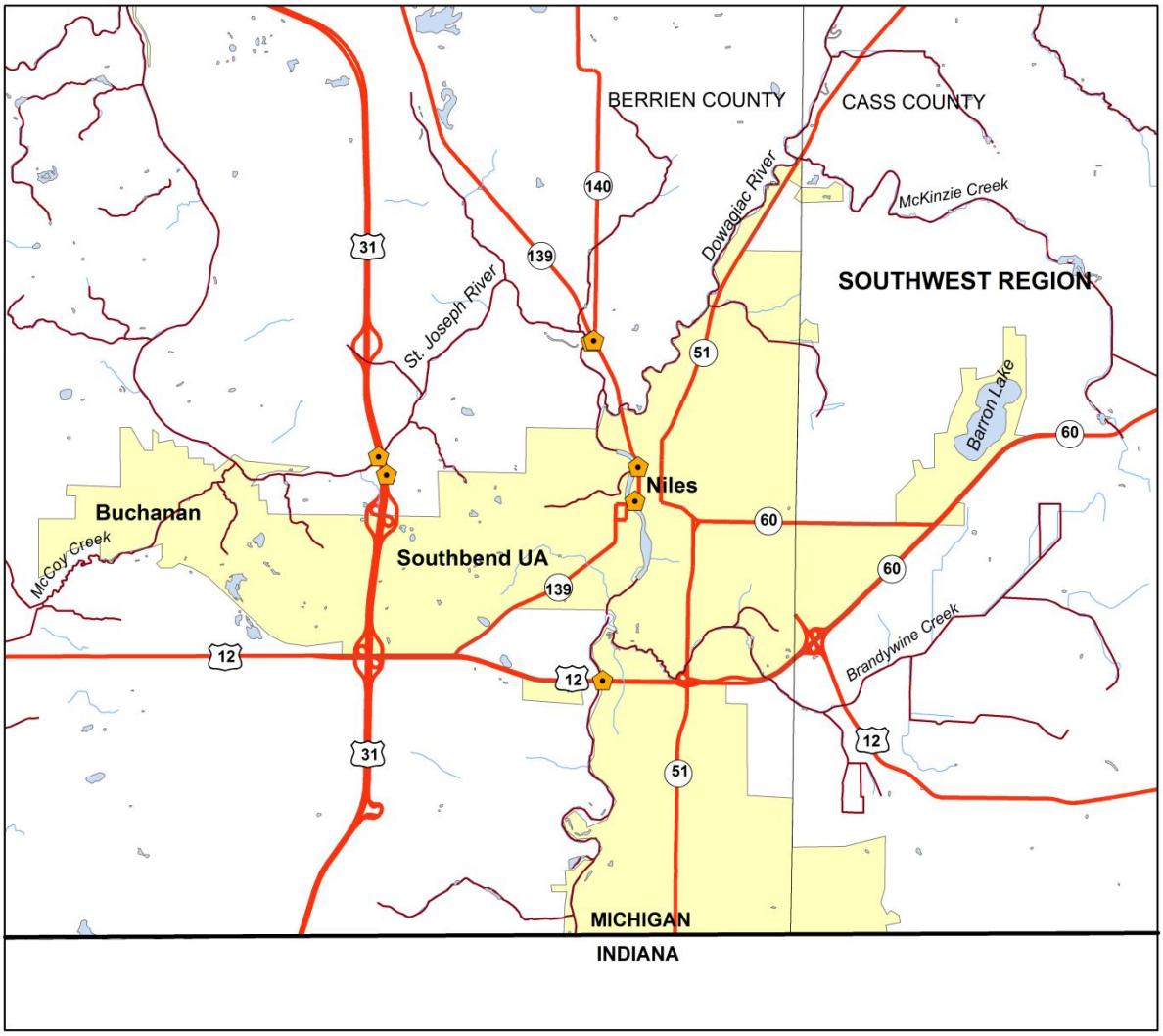
N

0 0.2 0.4 0.8 Miles

Designer: CSM
Date: 6/2/2016

AECOM

South Bend Urbanized Area



Legend

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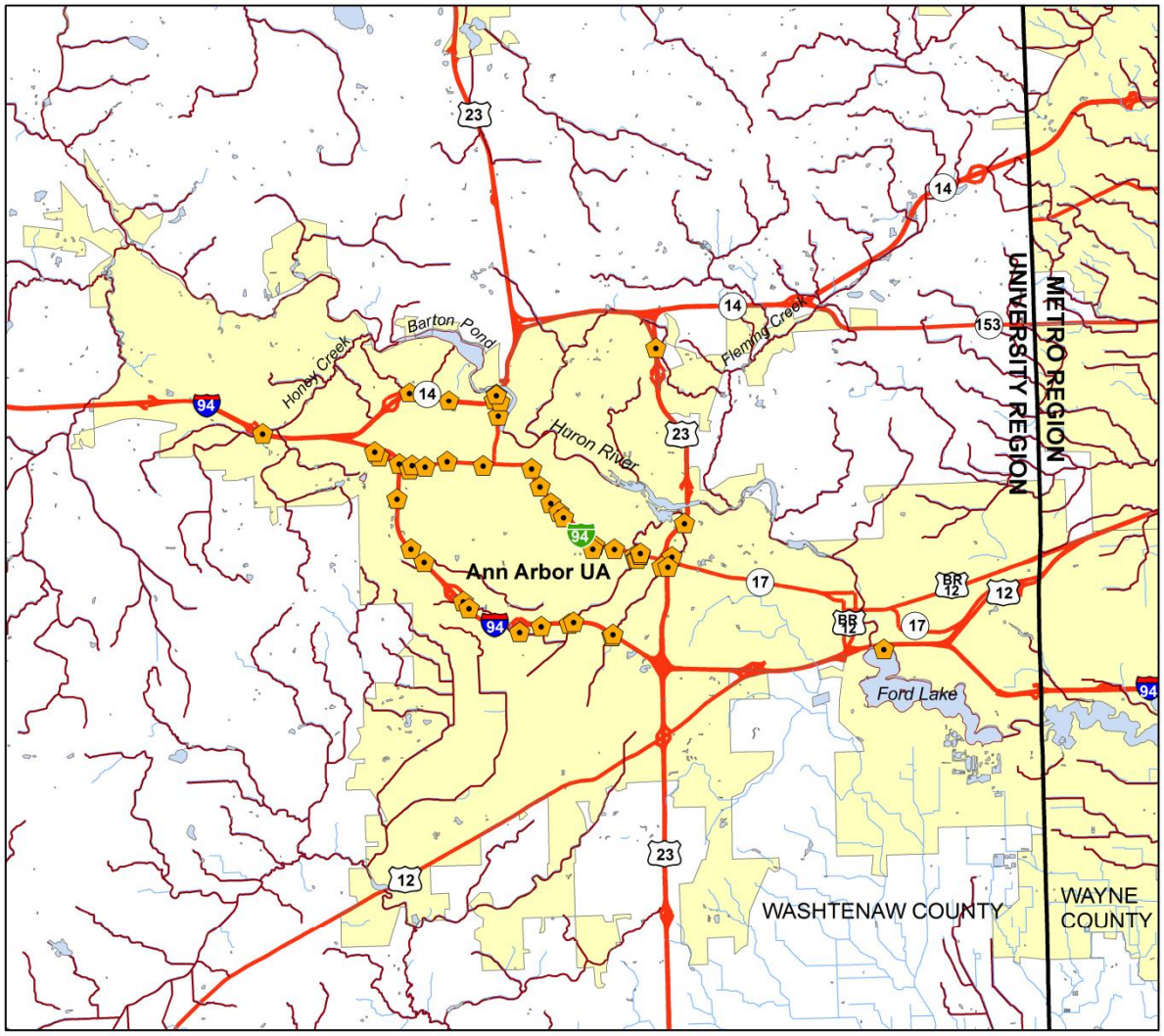
N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Ann Arbor Urbanized Area



Legend

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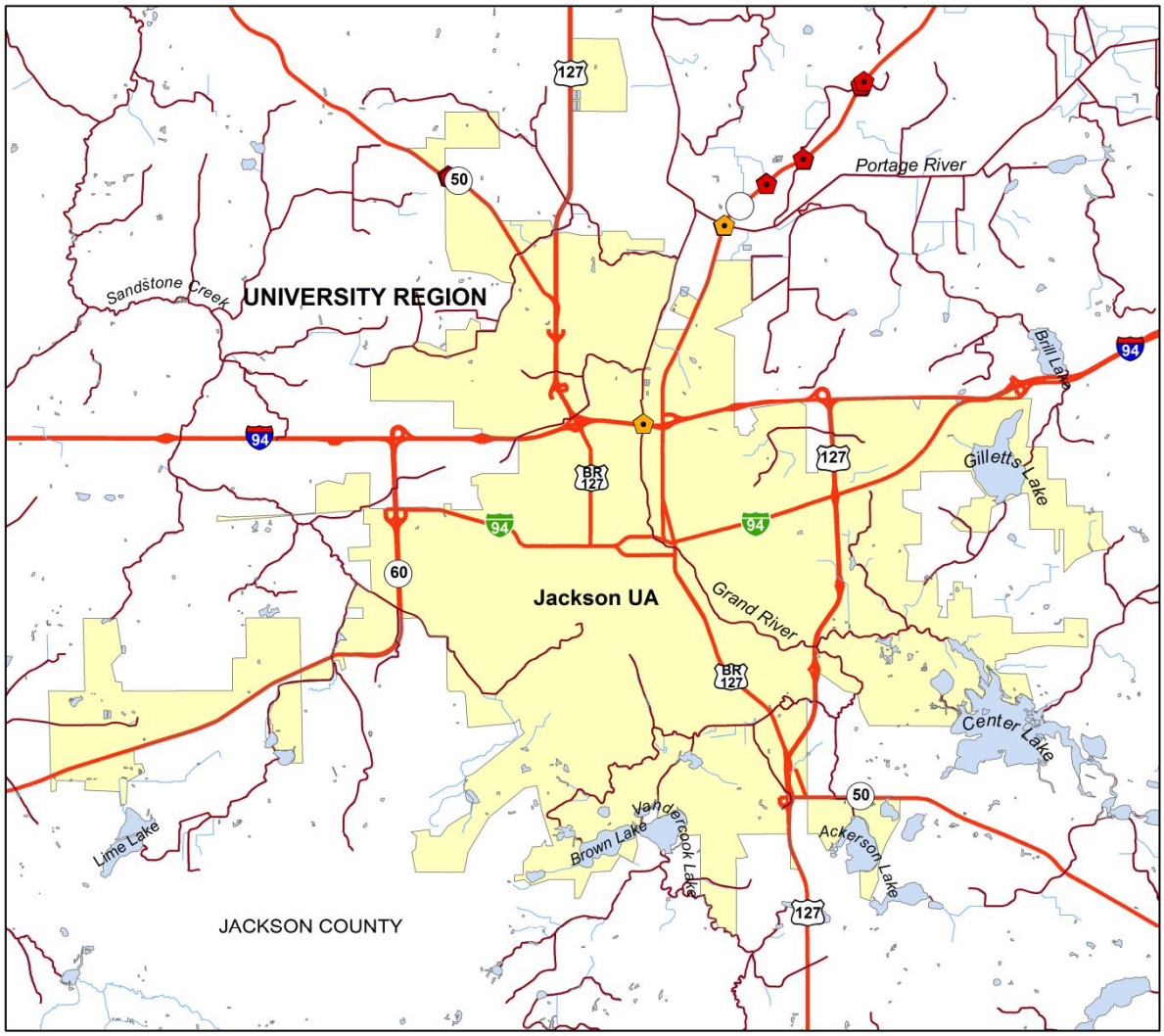
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Jackson Urbanized Area



Legend

- County Lines
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- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

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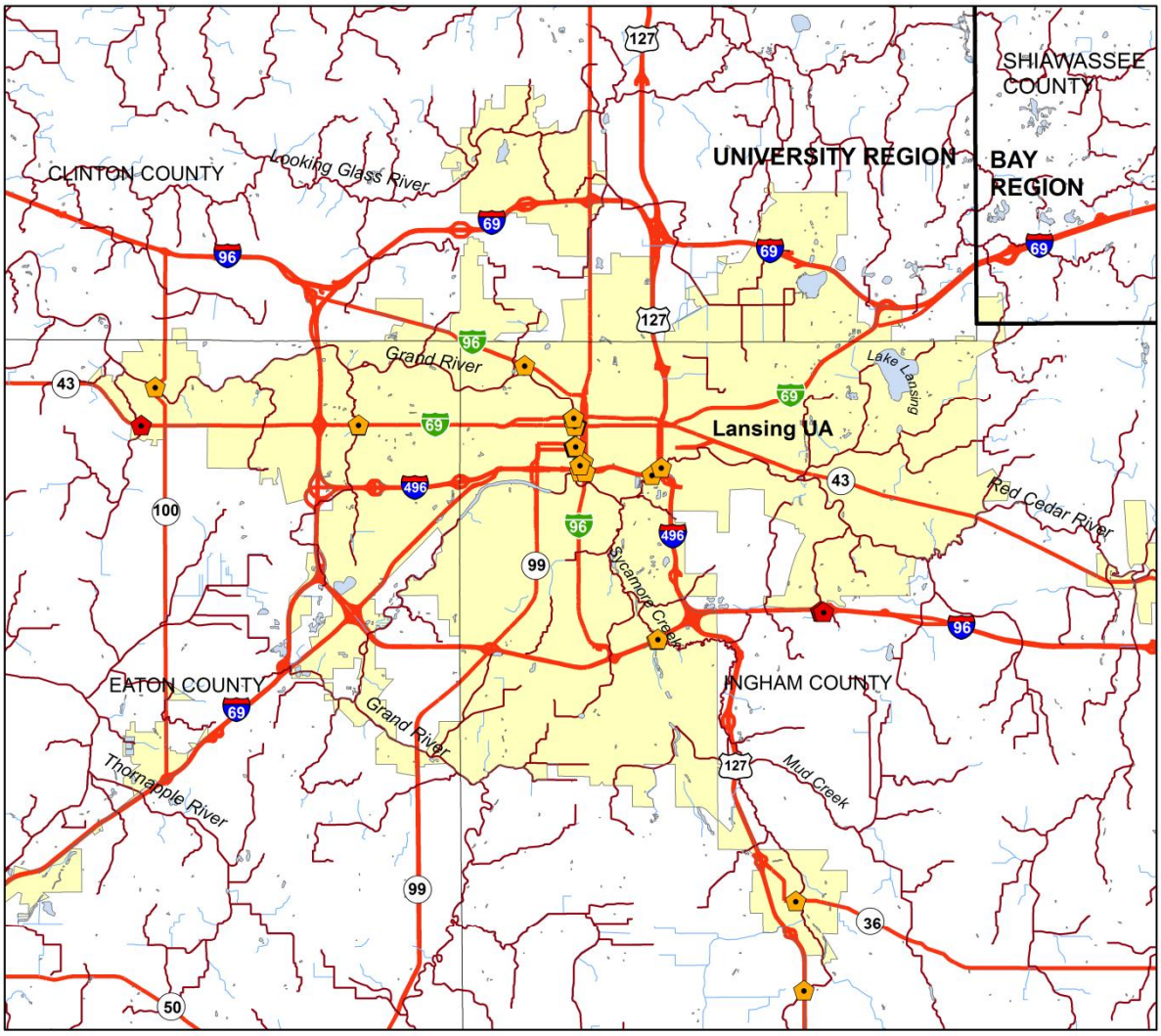
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Lansing Urbanized Area



Legend

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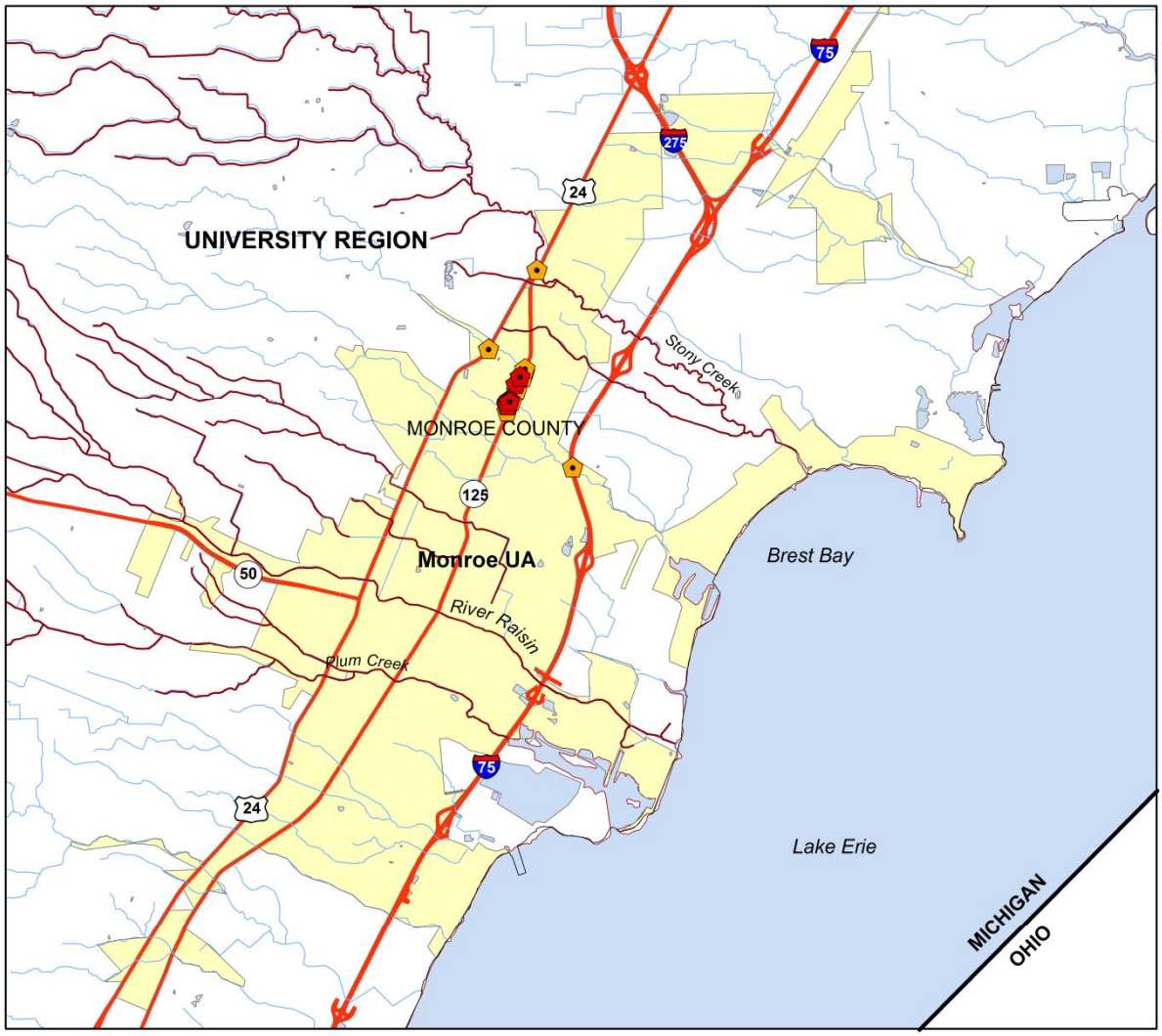
N

0 1.25 2.5 5 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Monroe Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library
-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library
-Urbanized Area status is based on 2010 census data.
-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

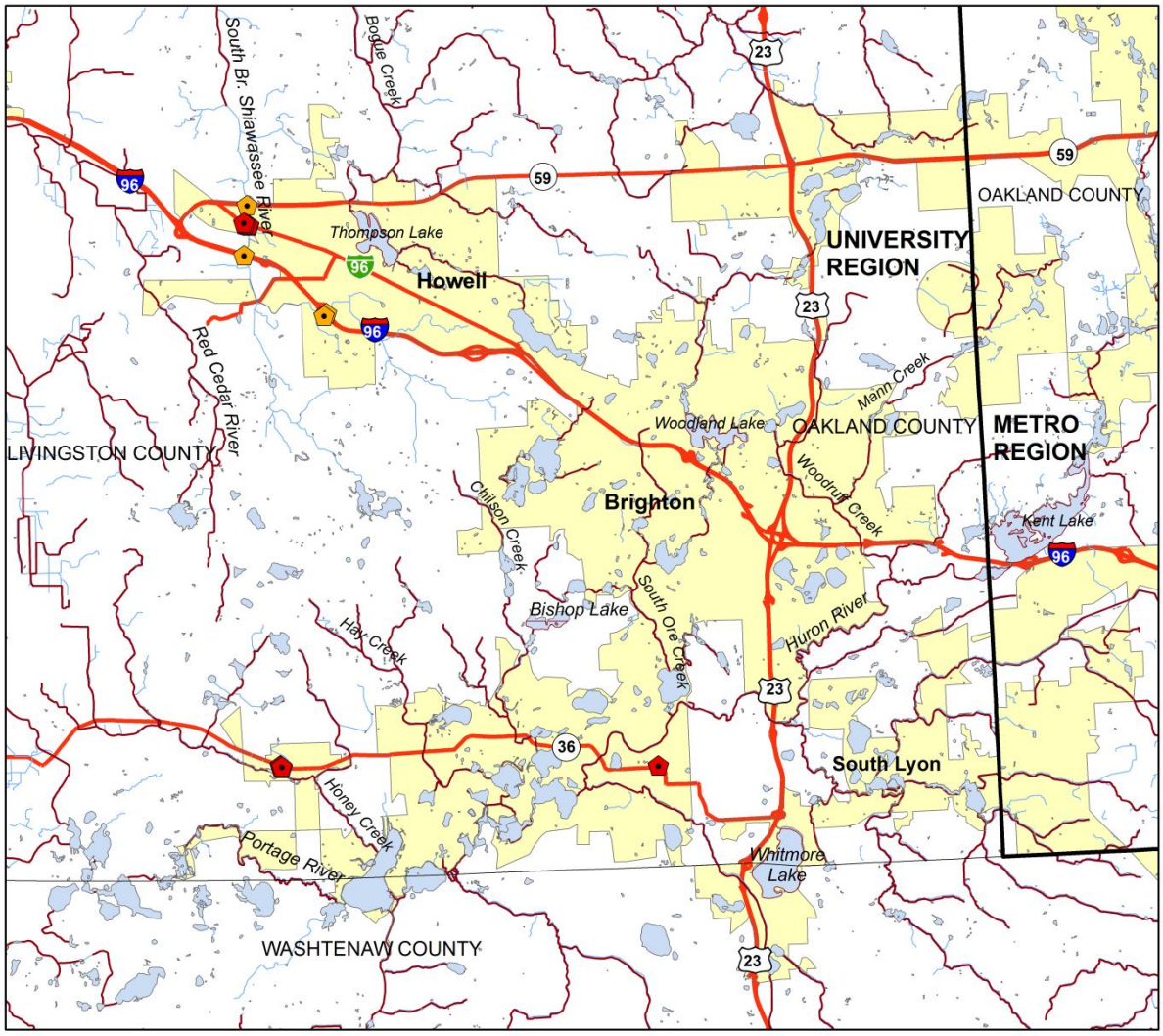
N

0 0.75 1.5 3 Miles

Designer: CSM
Date: 6/2/2016

AECOM

South Lyon-Howell-Brighton Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
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-Michigan county line data was obtained from the Michigan Center for Geographic Data Library
-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library
-Urbanized Area status is based on 2010 census data.
-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

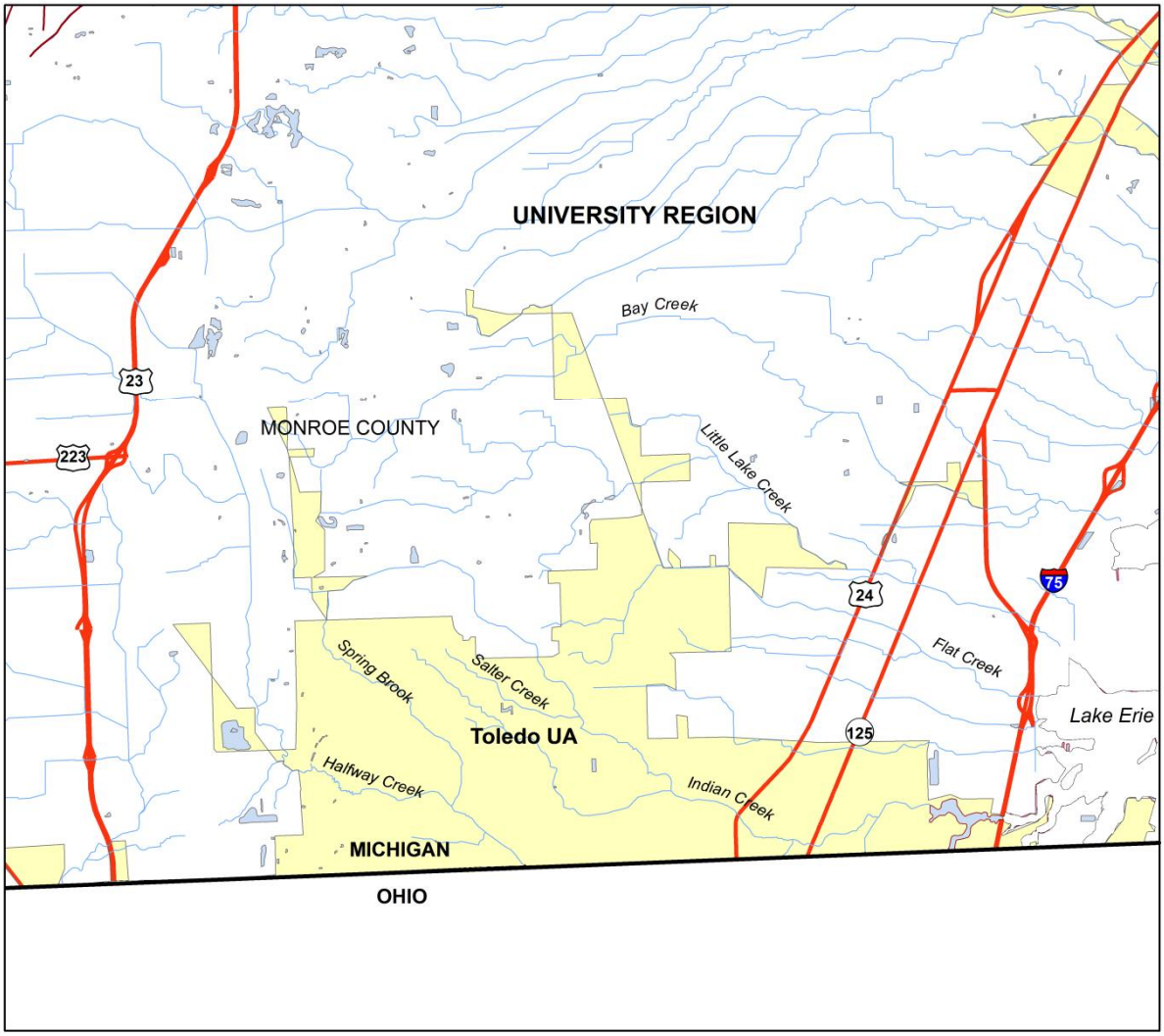
N

0 1 2 4 Miles

Designer: CSM
Date: 6/2/2016

AECOM

Toledo Urbanized Area



Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library
-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library
-Urbanized Area status is based on 2010 census data.
-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset
-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N

0 0.5 1 2 Miles

Designer: CSM
Date: 6/2/2016

AECOM

ACTIVITY IDEP 3: CONTINUE TO IDENTIFY ILLICIT DISCHARGE CONNECTIONS AND CONDUCT DRY WEATHER SCREENING PILOT PROJECT

MONITORING YEAR: 2017

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: Urbanized Area	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 4: Notification of MDEQ of Illicit Discharges · IDEP 5: Procedure for Determining Effectiveness of the IDEP · EDUCATION 4: Develop MS4 Training Module for Designers

OBJECTIVE

To identify illicit discharges and connections from the MDOT storm sewer system within 2010 Census urbanized areas as prioritized in the IDEP Plan.

DESCRIPTION

MDOT will continue to identify illicit discharges and illicit connections. This can be done through dry weather screenings. The Red Cedar River Dry Weather Screening project will be used as a pilot program used to determine feasibility of using dry weather screenings to identify illicit discharges and connections.

ANNUAL REPORTING

- Number and location of confirmed outfalls.
- Total number of suspected illicit connections/discharges identified.
- Number and location of manholes tested for each suspected illicit connection/discharge
- Results of sample analysis.
- Description and number of illicit connections/discharges verified.
- Estimated amount and type of pollutant removed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Follow illicit discharge procedure for 100% of illicit discharges found in order to eliminate illicit connections and discharges.	Follow up with persons who reported illicit discharge to ensure protocol was followed appropriately.

Annual Assessment: Several illicit discharge events took place in 2017:

- Bay Region in Arenac County found an illicit connection through a permit application. This issue is currently being addressed.
- Newberry TSC in Superior Region was notified by MDEQ of a potential illicit discharge on M-94 in Manistique. A preliminary investigation has been completed and no signs of an illicit was found. MDEQ was notified of the investigation results and MDOT will continue to cooperate.
- University region had one investigation but turned out not to be located within MDOT ROW. The information was passed along to the county road commission for review and action.

Update MDEQ of the areas selected for dry weather screening.	Updated list of dry weather screenings sent to the appropriate person at MDEQ by the Stormwater Program Manager.

Annual Assessment: The areas for dry weather screening were chosen in 2017 and MDEQ notified.

Desktop analysis for dry weather screening	Preparing storm sewer maps, stormwater system map, developing dry weather screening procedures
Annual Assessment: The desktop analysis was completed in 2016.	
Review outfalls identified in desktop analysis	Field work such as verification of drainage system components and locating stormwater outfalls.
Annual Assessment: MDOT received known outfalls from counties and cities within the dry weather screening project area.	
Results of dry weather screenings will be used to identify and eliminate illicit discharges	The effectiveness of the program will be assessed at the end of the program, in 2020.
Annual Assessment: During the dry weather screening field work in 2017, there were several wet locations which were documented in the report to MDEQ.	
The effectiveness of the dry weather screening will be assessed at the end of the first pilot project.	Report to be given to the Stormwater Program Manager at the conclusion of the dry weather screening pilot project
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020**.**	
Develop a guide on prioritized areas for non-stormwater discharges based on findings from the first dry weather screening pilot project.	Guide to be completed and distributed to relevant MDOT employees and job-related public.
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020	
Develop a plan and schedule for re-inspecting stormwater point sources for the inspection of stormwater point sources in conjunction with the plan to ensure point sources are inspected every five years.	A plan and schedule will be developed with coordination from a consultant and the Stormwater Program Manager. The final plan to be given to the Stormwater Program Manager for implementation.
Annual Assessment: This effort will be addressed once the dry weather screening project is finished in 2020	

ACTIVITY IDEP 4: REVIEW AND UPDATE PROCEDURE FOR RECEIVING AND NOTIFYING MDEQ OF ILLICIT DISCHARGES AND ACTIONS TAKEN

MONITORING YEAR: 2017

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 3: Identify Illicit Connects/ Dry Weather Screening

OBJECTIVE

To receive reports and notify the MDEQ of illicit discharges, statewide, to the MDOT storm sewer system. To take action toward removing these discharges.

DESCRIPTION

Procedure for receiving and responding to reports of illicit discharges is established as part of Section 1512.71 of the Construction Permit Manual. Training to effectively implement the procedure will be conducted. Procedure for receiving reports from construction site runoff is already in place as part of the SESC Manual.

ANNUAL REPORTING

- Track the number of notices received and the follow-up actions taken.
- Track the number of illicit connections/discharges identified and removed.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the procedure for receiving the notice of an illicit discharge. (As stated in Activity IDEP-3, follow the illicit discharge protocol for 100% of the illicit discharges identified).	A notification of procedure method will be posted on the MDOT Stormwater website.
Annual Assessment: The review is scheduled to be completed in 2018.	
Update procedure for notifying MDEQ of illicit connections and discharges.	The developed procedure will be sent in a notice to appropriate MDOT staff, identified in the responsible party, by the Stormwater Program Manager.
Annual Assessment: The updated procedure is scheduled to be developed in 2018.	

ACTIVITY IDEP 5: DEVELOP PROCEDURE FOR EVALUATING AND DETERMINING THE OVERALL EFFECTIVENESS OF THE IDEP

MONITORING YEAR: 2017

Minimum Control Measure : Illicit Discharge Elimination Program Activities **Statewide or Urbanized Area:** Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · IDEP 3: Identify Illicit Connects/ Dry Weather Screening · IDEP 4: Notification of MDEQ of Illicit Discharges

OBJECTIVE

Develop a procedure that will determine the effectiveness of the IDEP program to effectively eliminate illicit discharges.

DESCRIPTION

A procedure for assessing the effectiveness of the IDEP program will be developed. The procedure will be put in place and evaluated annually.

ANNUAL REPORTING

- Report number of illicit connection and discharge notices and resolutions
- Report trends in the number of notices and resolutions

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Report number of notices and resolutions per year.	Notices to be reported in the Annual Report
Annual Assessment: Three potential illicit discharges were reported in 2017 and are summarized in the IDEP 3 Activity Table.	
If any feedback on the program is given through stormwater contacts provided on the MDOT website, they will be forwarded to the Stormwater Program manager to compile in an archive. This archive can be monitored over time to determine the evolving comments and effectiveness of the program.	Stormwater contacts to forward any feedback on the stormwater program to the Stormwater Program Manager
Annual Assessment: No feedback was received in 2017.	

Appendix D – Post Construction Stormwater Management Activities

ACTIVITY POST CONSTRUCTION 1: UPDATE MAP OF KNOWN STRUCTURAL BMPS AND DEVELOP PROCESS FOR TRACKING NEW STRUCTURAL BMPS

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 2: Review and Update BMP Maintenance Requirements

OBJECTIVE

To develop a more complete map of the existing BMPs in Michigan and a system for reporting newly constructed BMPs.

DESCRIPTION

A map containing the most up to date BMPs installed in Michigan & system for tracking newly installed BMPs.

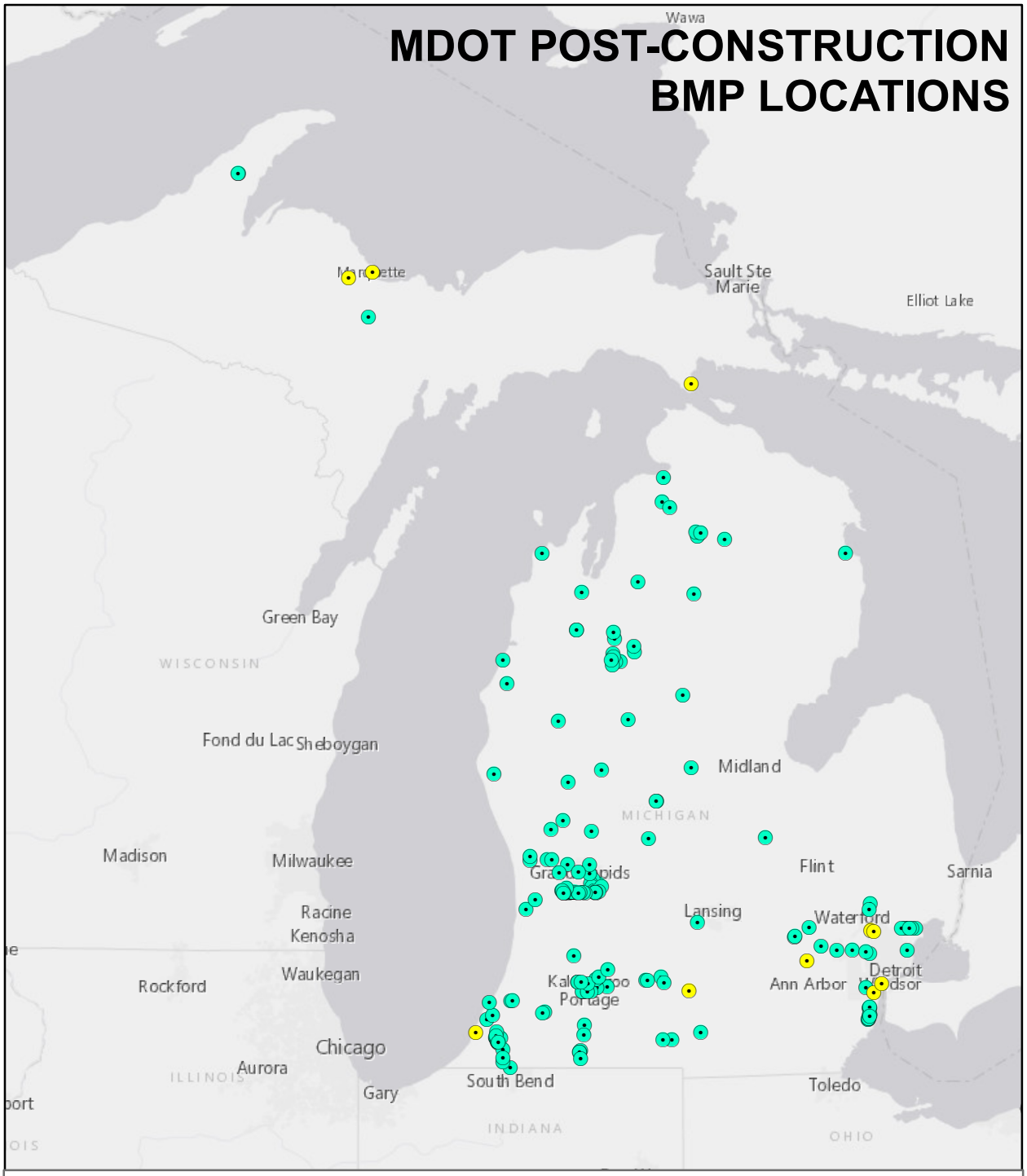
ANNUAL REPORTING

- Newly constructed BMPs to be included in the annual report.
- Updated map of known BMPs

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop map of all known BMPs in the state	Map will appear in the Annual Report
Annual Assessment: A map of all BMPs in the state was compiled in 2017. This map has been updated to reflect BMPs that were constructed in 2017 and reported to the storm water program manager to compile the annual report. The map is available on the following page.	
Develop form of means for communicating newly constructed BMPs to the Stormwater Program Manager	Form to be distributed to all TSC Region offices by the Stormwater Program Manager.
Annual Assessment: This measurable goal will be a focus for 2018.	
Newly constructed BMPs will be submitted using the developed form to the Stormwater Program Manager.	Form given to the Stormwater Program Manager by the TSC Region Managers on an annual basis. New BMPs to be listed in the Annual Report.
Annual Assessment: New BMPs that were constructed in 2017 have been identified in the attached table.	
Update map of known BMPs in the state	Map will appear in the Annual Report
Annual Assessment: The most recent version of the BMP map is available on the following page.	

MDOT POST-CONSTRUCTION BMP LOCATIONS



LEGEND

- BMP
- BMP CONSTRUCTED 2017

N

0 50 100 200 Miles

Table D1: 2017 BMP Construction Projects		
Region	Location	Type
Southwest	I-94 EB Bridgeman to Stevensville	Trench Drain and Leaching Basins
Southwest	M-99 in Albion	Extra Deep Sumps
Superior	US-41/M-28, Negaunee	Extra Deep Sumps
Superior	I-75 BL, St. Ignace	Vegetated Swales
Superior	US-41 Marquette Hospital TIP	Extra Deep Sumps
University	US-23 @ 8 mile Rd.	Detention Basins (2)
Metro	I-75 @ Sexton Kilfoil	Vegetated Swales
Metro	I-75 @ Rouge River	Deck Drains, Vegetated Ditches
Metro	I-75 @ Square Lake Rd.	Detention Basins
Metro	I-75 @ Adams Rd.	Detention Basin

ACTIVITY POST CONSTRUCTION 2: REVIEW AND UPDATE MAINTENANCE REQUIREMENTS FOR MDOT BMPS

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 1: Update Map of Structural BMPs · POLLUTION PREVENTION 4: Track Road Maintenance Activity

OBJECTIVE

To protect receiving water quality statewide by reviewing and updating maintenance requirements for permanent MDOT-approved BMPs.

DESCRIPTION

Updated procedures for the continued maintenance of BMPs.

ANNUAL REPORTING

· Discuss updates to the maintenance requirements

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review Maintenance Performance Guides and update accordingly.	Develop recommendations based on the review. To be given to the Stormwater Program Manager and documented in the Annual Report.
Annual Assessment: This measurable goal will be a focus for 2018.	
Develop and implement procedures for maintaining permanent BMPs not already having a maintenance procedure.	Newly developed procedures will be documented by the Stormwater Program Manager
Annual Assessment: This measurable goal will be a focus for 2018.	
Develop and implement a procedure for maintaining permanent BMPs after acceptance of BMP for use on MDOT projects	Newly developed procedures will be documented by the Stormwater Program Manager
Annual Assessment: For each new BMP constructed in 2017, a maintenance procedure was developed on a site specific basis.	
Notify appropriate staff of changes to guides.	Notification to be sent out to the appropriate staff via email as needed.
Annual Assessment: As guides are created/updated, appropriate staff will be notified.	
Maintain existing permanent BMPs according to existing MDOT procedures.	BMPs will be inspected every 5 years by a consultant to ensure proper maintenance.
Annual Assessment: BMPs are maintained according to the maintenance plans and are inspected on a rotating five year basis. In 2017, 56 BMPs were inspected to ensure proper maintenance.	

ACTIVITY POST CONSTRUCTION 3: DEVELOP PROCEDURE TO SELECT AND APPLY BEST MANAGEMENT PRACTICES (BMPs) FOR STORM WATER MANAGEMENT ACTIVITIES (POST-CONSTRUCTION) AND IMPLEMENT PROCEDURES
MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 1: Update Map of Known Structural BMPs and Develop Process for Tracking new Structural BMPs · POST CONSTRUCTION 2: Review and Update Maintenance Requirement for MDOT BMPs · POST CONSTRUCTION 4: Achieve Water Quality and Channel Protection Compliance · POST CONSTRUCTION 6: Update Drainage Manual · POLLUTION PREVENTION 1: BMP Inspections

OBJECTIVE

To develop a procedure for selecting, applying and maintaining permanent BMPs for selected MDOT projects statewide. Implementing these procedures will protect receiving water quality.

DESCRIPTION

Development of selection procedure for applying BMPs for storm water management activities.

ANNUAL REPORTING

- Report completion of BMP selection and pollutant discharge reduction estimate tools.
- Track the permanent BMPs selected for earth-disturbing projects using existing databases.
- Track permanent BMP installations, maintenance, and modifications.
- Track employee training on BMP selection and maintenance.
- Report pollutant discharge education based on theoretical BMP performance.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Update procedures for selecting permanent BMPs.	A selection tool for selecting BMPs will be posted on the MDOT Storm Water website.
Annual Assessment: A draft version of the BMP selection tool has been completed and is being tested for accuracy with MDOT projects.	
Develop a procedure to estimate pollutant discharge reduction based on theoretical BMP performance.	The BMP selection tool will incorporate a procedure for estimating pollutant discharge reductions.
Annual Assessment: The version of the BMP selection tool distributed to MDOT designers suggests structural BMPs based on the pollutant reduction requirements onsite.	
Issue staff guidance for the selection tool.	A document outlining the instructions for the tool will be distributed to the appropriate storm water related staff.
Annual Assessment: This was completed during 2017 and is being monitored for effectiveness & accuracy.	

Implement procedures to select permanent BMPs.	Procedures will go into effect on the first of the year.
Annual Assessment: This was completed in 2017.	
Evaluate existing procedures for applying and maintaining permanent BMPs.	Recommendations based on the evaluations will be given by the responsible party to the Stormwater Program Manager.
Annual Assessment: This was completed in 2017.	
Update and/or develop procedures for applying and maintaining permanent BMPs.	Approved recommendations will be implemented into procedures.
Annual Assessment: This measurable goal is a target for 2018.	
Document procedures and issue staff guidance.	Updated procedures and guidance will be emailed to stormwater related staff.
Annual Assessment: This measurable goal is a target for 2018.	
Implement procedures to select, apply, and maintain permanent BMPs.	Updated or new procedures will be implemented for the selection, application, and maintenance of BMPs.
Annual Assessment: The BMP selection tool was issued to relevant MDOT staff in 2017 and involves the procedure of how to select and apply structural BMPs. The maintenance of BMPs will be a goal for 2018.	
All projects will be evaluated for permanent stormwater BMP inclusion during scoping and early design.	BMPs identified for inclusion in new projects will be outlined in the Stormwater Annual Report.

Annual Assessment: There were several projects which incorporated permanent, structural BMPs in 2017:

- JN 119672, CS 11015, I-94 EB from Bridgeman to Stevensville: Median regarded and included a 10' underdrain below ditch bottom to promote infiltration.
- JN 116324 CS 13043, M-99 in Albion: Road reconstruction included extra deep sumps.
- JN 116378, CS 52042 (52041), US-41/M-28: Extra deep sumps installed between Teal Lake Ave. and Baldwin Ave.
- JN 115576 Segment 1 I-75 Modernization: Two stormwater detention basins constructed within the right of way of Segment 1 or the I-75 modernization in Oakland County. One is located just north of the NB to Square Lake Road WB Interchange Ramp that discharges to the Dan Devine Drain. The other is located in the NW quadrant of the Adam's Road Interchange.
- JN 115775 Reconstruction of I-75 BL from Airport Drive to N. Mackinac Ln: Constructed 200 ft of vegetated ditches at the stormwater discharge points along Hoban Creek along with 202 ft of stone check dams, 41 extra deep sumps, 126 syd of riprap at culvert outlets and cub spillways.
- US-41/M-28, Marquette Hospital Transportation Improvement Permit Project: constructed a box culvert with baffles to reduce velocity, added extra deep sumps.
- US-23 ATM Project: Two detention basins were added at the 8 Mile Road Interchange. One in the NW Quadrant and one in the NE Quadrant.
- JN 116286, 116291 I-75 over Rouge River: Vegetated buffer and plantings installed, riprap has been added to the bridge downspouts.

There were several other projects which incorporated temporary measures or general stormwater improvements in 2017 including:

- JN 117357 Intersection Safety Project: silt fence, sediment traps, inlet protection, fabric drops, stone check dams utilized.
- JN 126295 Cadillac Rest Area/US-131 project in Wexford County: sediment traps, stone check dams, silt fence, concrete spillways, downspouts, and riprap utilized.
- M-46 and Afton: a corroded CMP replaced with high strength plastic culvert.
- Placed 400 ft of curb and gutter along with downspouts on SB US-131 south of Post Drive to stop slop failures and washouts. Backslope was stabilized with vegetation.
- Riprap downspouts along the edge of pavement on M-21 at 2 locations to prevent shoulder erosion due to washouts. 500 ft of ditching along WB I-196 west of Butterworth. Original flow line restored to take water away from the Kent Pedestrian Trail.

- JN 115866, US-2/41 and M-35 Escanaba Bridge Project: Modified valley gutter and presloped trench drains, some outlets will have baffles.
- JN 116622, CS 52055, M-553 from North of County Road 480 to Carp River in Marquette County: Added extra deep sumps and constructed wetlands.
- JN 130242, CS 52022, M-94 at the East Branch of the Chocolay River: culverts replaced which had been washed out.
- Warren Court east of US-23: Inlet control structure installed to meter discharge from the west side of US-23 to the east side of US-23 to mitigate flooding issues.
- M-50 at Gilbert Highway in Onsted, MI: Repaired a catch basin with sump which was previously causing flooding issues.

For more information, see Activity Post Construction 3.

ACTIVITY POST CONSTRUCTION 4: COMPLY WITH PERFORMANCE STANDARDS FOR NEW DEVELOPMENT AND RE-DEVELOPMENT PROJECS TO THE MAXIMUM EXTENT PRACTICABLE
MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION1: Program Assessment and Reporting · POST CONSTRUCTION 3: Develop Selection Procedure for BMPs · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters · POST CONSTRUCTION 7: Site Plan Review for Post Construction Projects

OBJECTIVE

Achieve compliance standards for water quality and channel protection issued by the United States Environmental Protection Agency for all new development and redevelopment projects.

DESCRIPTION

As designated by the United States Environmental Protection Agency, all new development and redevelopment projects must comply with water quality and channel protection standards. Compliance with channel protection and water quality standards will be estimated, per project, using the BMP selection tool as a preliminary analysis tool, as described in Activity Post Construction 3.

ANNUAL REPORTING

- Post construction projects achieving standards will be documented in the Annual Report
- All newly constructed BMPs (as well as modifications, replacements, or enhancements of BMPs) will be documented in the Stormwater Annual Report

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Desktop assessment of new development and redevelopment projects using the BMP screening tool in preliminary analysis.	Results from the analysis will be submitted for each project to the Stormwater Program Manager.

Annual Assessment: The first draft of the BMP selection tool has been completed and distributed to MDOT designers. Throughout 2018, the tool will be tested for future projects, with the goal of this tool being used in the preliminary analyses of all projects. The BMP screening tool was not released to the department in prior to the scoping timeframe of 2017. The tool was tested on several projects with reasonable results. Training was provided to 79 individuals across the department to allow its use in the 2018 scoping period.

Meet compliance standards goals to the maximum extent practicable. Compliance standard goals include: · BMPs are designed based on site constraints to reduce post development suspended solids loadings · Treat runoff from 90% of all runoff producing storms · When impervious area is increased, post-construction runoff rate and volume match pre-development conditions as closely as possible for storms up to the two year, 24 hour event · Addressing specific pollutants on a site specific basis	Results from the analysis will be submitted for each project to the Stormwater Program Manager.

Annual Assessment: 197 projects were reviewed in 2017 to ensure they met the above criteria to the maximum extent practicable.

Document the modification, replacement, or enhancement of BMPs.	A description of the work done will be given to the Stormwater Program Manager for inclusion in the Annual Report

Annual Assessment: No existing BMPs were modified, replaced or enhanced in 2017.

ACTIVITY POST CONSTRUCTION 5: REVIEW PROJECTS WITH STORMWATER DISCHARGES TO WATER BODIES WITH PROMULGATED TOTAL MAXIMUM DAILY LOADS (TMDLs)

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 3: Procedure to Select BMPs · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 6: Update Drainage Manual

OBJECTIVE

To develop a procedure for the review of projects with stormwater discharges to water bodies with a promulgated TMDL and to and implement stormwater controls statewide to meet responsibilities established by TMDLs to the MEP.

DESCRIPTION

An interactive map showing trunklines crossing 303(d) listed water bodies will be beneficial in the planning of MDOT projects to ensure compliance with water quality standards of discharges. All new development and redevelopment projects will use this map as a tool to assess if stormwater discharges to TMDL water bodies.

ANNUAL REPORTING

- Report completion of interactive mapping system on MDOT Stormwater Website
- Track location of projects discharging to waters with TMDL
- Track compliance with TMDL requirements.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop interactive mapping system on the MDOT Stormwater Web Site showing MDOT trunklines crossing 303(d)-listed water bodies.	Completed tool available to MDOT staff.
Annual Assessment: This measureable goal was completed in 2016 and is available to MDOT design staff. This newly created GIS tool allows users to enter their project limits and see if they intersect with 303(d) listed waters.	
Review all new projects that discharge to waters of the state with a promulgated TMDL.	Projects to be reviewed by environmental staff as necessary.
Annual Assessment: 197 potential projects were reviewed in 2017 that could discharge to a waters of the state. Each was reviewed for applicable TMDL requirements.	
Evaluate various options to mitigate projects discharging to TMDL water bodies. BMPs are to be implemented to comply with stormwater related requirements to meet TMDLs.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
Annual Assessment: No new projects with TMDLs occurred in 2017. As these projects are encountered, this measurable goal will be adhered to.	
Install and maintain BMPs on projects intersecting TMDL waterbodies.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
Annual Assessment: No new construction projects with TMDLs occurred in 2017. As these projects are encountered, this measurable goal will be adhered to.	

ACTIVITY POST CONSTRUCTION 6: PERIODICALLY UPDATE DRAINAGE MANUAL

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · PUBLIC INVOLVEMENT 3: Coordinate with MPOs · POST CONSTRUCTION 3: Selection Procedure for BMPs · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters

OBJECTIVE

To update MDOT's policies and procedures for the design of BMPs. Other fields to be reviewed include the construction, maintenance, and demolition of BMPs as outlined in the manual.

DESCRIPTION

The existing Drainage Manual will be reviewed and revised as needed to include the latest details of the stormwater management program. Notification and guidance will be given to appropriate MDOT employees and job-related public.

ANNUAL REPORTING

· Track changes made to the Drainage Manual.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Assess the need to update the Drainage Manual. The first update of the Drainage Manual will include the new source of rainfall data of the MDEQ's 2006 memo providing the 90 percent annual non-exceedance storm statistics.	Proposed changes to be drafted by the environmental staff.
Annual Assessment: The Drainage Manual was assessed in 2016. The result of the assessment is that the manual needs to be updated to reflect the current status of the MDOT stormwater program.	
Update the Drainage Manual. Changes to manual must be approved by the Engineering Operations Committee (EOC).	Proposed changes to be delivered to the EOC for approval.
Annual Assessment: Instead of updating the Drainage Manual, a document named the Post-Construction Stormwater BMP Design Guidance has been created to supplement the Drainage Manual and aid MDOT designers in the design of structural stormwater BMPs. A draft of the document was created in 2017 and finalizing the document is a goal of 2018.	
Notify appropriate staff of changes to the manual.	Updated drainage manual will be distributed to the appropriate staff.
Annual Assessment: Once the document is completed, MDOT staff will be notified.	

ACTIVITY POST CONSTRUCTION 7: SITE PLAN REVIEW FOR PROJECTS

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 4: Compliance with Water Quality and Channel Protection Standards

OBJECTIVE

Ensure compliance with post-construction stormwater requirements through a review process of site plans for installation, operation, and maintenance.

DESCRIPTION

As designated by the MDEQ MS4 Permit, MDOT must submit site plans for approval for each project subject to the post-construction stormwater runoff control requirements. Reviews will allow MDOT to ensure that the finished project will sufficiently meet post-construction stormwater runoff program requirements and long-term operation and maintenance of BMPs.

ANNUAL REPORTING

· Document number of projects submitted for review

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Initial site plans of post-construction stormwater BMPs shall be submitted for review to MDOT stormwater staff.	Site plan reviews by stormwater staff.
Annual Assessment: In 2017, no plans were submitted to the MDOT stormwater staff as the new storm water permit was still being developed. As plans are developed in the future, they shall be submitted for review by stormwater staff.	
Develop procedure for the site plan review and approval process. Procedure shall include a checklist of specific criteria to be used by plan reviewers.	Procedure shall be distributed to appropriate staff by the MDOT Stormwater Program Manager.
Annual Assessment: This measurable goal will be a focus for the year 2019.	

Appendix E – Construction Stormwater Runoff Control Activities

ACTIVITY CONSTRUCTION 1: REVIEW INTERNAL QUALITY ASSURANCE/QUALITY CONTROL (QAQC) PROTOCOL FOR CONSTRUCTION STORMWATER RUNOFF CONTROL

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POST CONSTRUCTION 4: Water Quality and Channel Protection · POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters · IDEP 1: List of Construction Projects and Maintenance Activities

OBJECTIVE

To improve the effectiveness of temporary BMPs statewide through internal QAQC for construction stormwater control.

DESCRIPTION

Development of the QAQC protocol is underway and will be submitted to the Environmental Committee for approval.

ANNUAL REPORTING

- Track number and result of internal reviews
- Track actions taken per MDOT/SESC Manual.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the QAQC protocol for construction stormwater control.	Revisions given to the Stormwater Program Manager by the responsible party.
Annual Assessment: This effort will be a focus for 2019.	
Update the QAQC protocol for construction stormwater control as necessary.	Final QA/QC protocol given to the Stormwater Program Manager by the responsible party.
Annual Assessment: This effort will be a focus for 2019.	
Notify the appropriate staff of changes to the protocol.	Notification and guidance documents to be distributed to staff members.
Annual Assessment: This effort will be a focus for 2019.	

Appendix F – Pollution Prevention/Good Housekeeping Activities

ACTIVITY POLLUTION PREVENTION 1: BMP INSPECTIONS MONITORING YEAR: 2017	
Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting
OBJECTIVE	
Routine inspections of MDOT structural BMPs to ensure compliance with various components of the permit.	
DESCRIPTION	
BMPs will undergo inspection to ensure that facilities comply with developed maintenance procedures.	
ANNUAL REPORTING	
· Summary of all inspections done and recommendations for each BMP.	
MEASURABLE GOALS	
MEASURABLE GOAL	**MEASURE OF ASSESSMENT**
An inspection of BMPs shall be conducted at least once every five years to ensure appropriate maintenance.	Inspection reports to be given to the Stormwater Program Manager.
Annual Assessment: 56 BMPs were inspected during the 2017 monitoring period. See attached BMP Inspection Summary. See map in the inspection report for a BMP inspections schedule for all years in the permit cycle.	
Items identified during inspections as needing attention shall be addressed.	Stormwater Program Manager to notify maintenance crews and follow up, as necessary.
Annual Assessment: Recommendations provided in the 2017 summary will be addressed during 2018.	
As needed, identify BMPs to be modified, replaced, or enhanced.	BMPs identified for modification, replacement, or enhancement will be outlined in the annual report.
Annual Assessment: On an as needed basis throughout the permit cycle, BMPs will be modified, replaced or enhanced.	

Stormwater Best Management Practices - 2017 Inspections Summary

Stormwater BMPs are inspected every 5 years on a rotating basis. 56 of these BMPs were inspected in 2017. **Figure 1** shows the locations of BMPs inspected in 2017 as well as a tentative schedule for future inspections.

Each components of the BMP such as fencing, inlet and outlet conditions, mowing, trash and debris, etc. is inspected and scored on a scale from 1-9. An average score is then taken and documented for each BMP. This value is used to track the BMP's condition over time. Recommendations are also given based on the condition of the BMP. A summary of each of the BMPs inspected in 2017 is listed in **Table 1**.

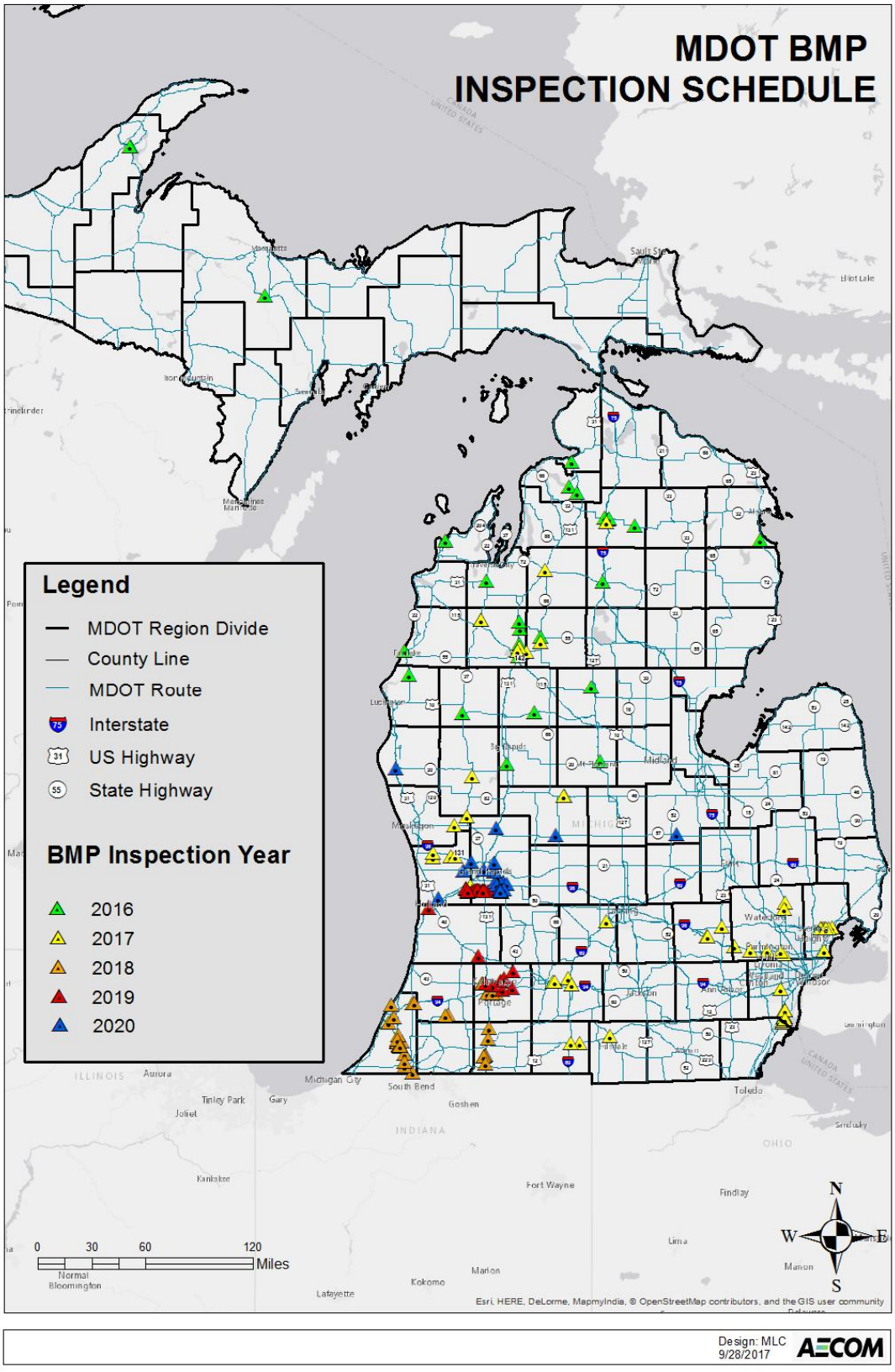


Figure 1 - BMP Inspection Schedule

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Branch	US-12 (150 ft S) at 1,000 ft W of Lake Blvd in Quincy	Detention Basin	Average score of 7.15. All scores ranged from fair to good.	Stabilize west side of inlet channel. Remove logs from inlet channel. Remove sediment from inlet channel. Continue regular trash removal.
Branch	I-69 at US-12	Retention Basin	Average score of 6.56. Two scores of poor, the remainders range from fair to good.	Leave 5' buffer between all channel and mowed areas. Coordinate trash removal (preferably twice per year). Clear IN-4 and IN-5.
Calhoun	M-96 at Eastland Dr	Retention Basin	Average score of 7.27. All scores were in the fair to good range.	None.
Calhoun	M-96 at Floral Lawn Memorial Gardens	Retention Basin	Average score of 7.6. All scores ranged from fair to new.	None.
Calhoun	I-94 @ Old US-27	Retention Basin	Average score of 6.92. All scores ranged from fair to good.	Coordinate trash removal (preferably twice per year).
Calhoun	I-69 SB at Turkeyville Rest Area	Rain Garden	Average score of 6.63. All scores ranged from fair to good.	Coordinate trash removal and sediment removal from spillways (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Eaton	I-69 at Billwood Hwy in SE Quadrant	Detention Basin	Average score of 5.25. Three scores of poor, the remainders range from fair to good.	Stabilize erosion.
Hillsdale	US-12 at Oak St in SE Quadrant	Retention Basin	Average score of 6.13. One score of poor, the remainders range from fair to good.	Clear debris such as down trees from basin interior. Locate and unbury IN-3. Coordinate trash removal at gate and along fencing. Stabilize erosion.
Kalkaska	US-131 in Kalkaska	Detention Basin	Average score of 6.14. All scores range from fair to good.	Clear path for maintenance at outlet structures, clear sediment from curb cut inlets once per year.
Livingston	I-96 at Latson Rd (east of ramp)	Detention Basin	Average score of 7.71. All scores range from fair to new.	Coordinate trash removal (preferably twice per year), replace grates on IN-1, IN-3.
Livingston	I-96 at Latson Rd (SE Quad)	Detention Basin	Average score of 7.43. All scores range from fair to new.	Coordinate trash removal from several inlets and sediment removal from inlets twice per year. No mowing at inlet channels down into basin.

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Livingston	US-23 at M-59 in NE Quadrant	Detention Basin	Average score of 6.29. All scores range from fair to good.	Remove organics from outlet structure for easier inspection. Mow area surrounding basin once per year (after summer). Coordinate trash removal (preferably twice per year).
Macomb	M-59 at Elizabeth St in median	Detention Basins (2)	Average score for east basin is 5.39. The basin has 9 "poor" scores. Average score for west basin is 5.60, the basin has 3 "poor" scores	*East basin* – Coordinate trash removal (preferably twice per year), maintain 5' vegetated buffer between water's edge and mowed grass. Remove overgrown vegetation that prevents easy access to outlet for inspection. *West basin* - Invasive species removal, maintain 5' vegetated buffer between water's edge and mowed grass, mow once per year, at end of summer.
Macomb	M-59 at Snover Road	Infiltration Basin	Average score of 6.13. One score of poor, the remainders range from fair to good.	Coordinate trash and sediment removal (preferably twice per year).
Macomb	M-59 at Garfield Rd (Feiblecorn Drain)	Detention Basins (3)	Average score of 5.7. Two critical scores, two poor scores.	Mow once per year, at the end of season. Repair broken culverts (IN-2 and IN-3). Vacuum accumulated sediment. Coordinate trash removal (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Macomb	M-59 at Ronnen Dr in median (East and West of Crittendon)	Detention Basins (2)	Average score of 6.21. One score of poor, the remainders are in the fair to good range.	Remove large branches from basin center, coordinate trash removal (preferably twice per year).
Macomb	M-59 at Rivergate Dr in median (Middle branch of Clinton River)	Detention Basins (2)	Average score for the east basin is 6.31. This basin has one score of poor, the remainders ranging from fair to good. Average score for the west basin is 6.93. This basin has one score of poor, the remainders ranging from fair to good.	*East basin* – Remove overgrown vegetation from inlet structures. *West basin* – Coordinate trash removal (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Macomb	M-59 at Heydenreich Rd in median	Detention Basins (2)	Average score for the east basin is 6.13. Two scores of poor, the remainders range from fair to good. Average score for the west basin is 5.79. Four scores were poor, the remainders range from fair to good.	*East basin* – Maintain 5' vegetated buffer between water's edge and mowing. Mow once per year, at end of summer season. *West basin* - Leave at least 5' vegetated buffer between water's edge and mowing. Mow once per year at the end of summer. Clear vegetation from outlet.
Macomb	M-59 at Macomb Center Dr in Median	Detention Basin	Average score for basin is 5.69. There are 4 "poor" scores, the remainders range from fair to good.	Maintain 5' vegetated buffer between mowing and water's edge. Mow once per year, at the end of summer. Replace broken sections of fencing, remove fencing from water.
Macomb	I-696 at Elm St	Oil-Gas Separator	Average score for basin is 6.8. All scores ranged from fair to good.	Cleanout of system (preferably at least once per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Missaukee	M-55 at Cadillac Rd	Infiltration Basin	Average score of 7.4. One score of fair, the remainder were good.	Clear sediments and debris from inlet structures, repair fencing.
Missaukee	M-66 in Lake City	Detention Basin	Average score of 7.78. One score of fair, the remainder are good to new.	None.
Montcalm	M-46 East of Edmore, 11th St	Detention Basin	Average score of 6.60. All scores ranged from fair to good.	None.
Montcalm	M-46 East of Edmore, Neff Rd	Detention Basin	Average score of 6.08. One score of poor, the remainder range from fair to good.	Replace/repair gate hasp and align gates, lock gate. Repair erosion.
Muskegon	M-37 S of Newaygo County Line	Detention Basin	Average score of 5.55. One score of poor, the remainder are fair.	Repair asphalt shoulder to prevent further collapsing of pavement. Cut/trim dead trees before they fall onto roadway, possibily install guardrail.
Muskegon	M-46 West of Trent Rd (Across from Moss Ridge Golf Club)	Retention Basin	Average score of 5.85. One critical score, the remainder ranged from fair to good.	Repair fencing in the area of the pond/basin, Provide new riprap spillway at north side 24" culvert.
Newaygo	M-37 south of 16th street	Retention Basins (2)	Average score of 7.75. All scores were good.	None.

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Oakland	I-96 near Kent Lake	Detention Basin	Average score of 8.06. All scores ranged from fair to new.	None.
Oakland	M-24 between Harmon Rd and Golden Gate Road	Bioswale, Energy Dissipaters	Average score of 7.87. Two "fair" scores, the remainders range from good to new.	Coordinate trash and sediment removal from inlet structures (preferably twice per year).
Oakland	I-696, River Rouge	Pump Station	Average score of 5.43. Seven scores of poor, the remainders range from fair to good.	Remove large trees, remove downed trees in main basin, create path from gate to outlet on west side of basin for safer inspection. Clear plugged inlets.
Oakland	I-96 at Beck Rd (South side I-96)	Detention Basin	Average score of 5.83. One "poor" scoring, the remainders range from fair to good.	Control Phragmites, provide erosion control if problem continues, coordinate trash removal (preferably twice per year).
Oakland	M-10 and Northwestern Highway, McKinley Drain	Infiltration Basin	Average score of 5.18. Five scores of poor, the remainders range from fair to good.	Clear sediment and debris from all inlets, coordinate trash removal at inlets and throughout basin, clear path for easier access to structures.
Oakland	I-696, Minnow Pond Drain	Swale Retrofit	Average score of 5.83. One "poor" score, the remainders range from fair to good.	Replace fabric and riprap in Channel 3, coordinate trash removal (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Oakland	M-24 at Paint Creek	Infiltration Basin	Average score of 6.92. All scores range from fair to good.	Remove debris and accumulated sediments from two inlets, coordinate trash removal (preferably twice per year).
Otsego	I-75 at McCoy Rd	Infiltration Basin	Average score of 7.18. All scores range from fair to good.	Stabilize erosion on north side of the basin, making slopes more gradual. Trucks should not be driving on basin side slopes.
Ottawa	I-96 at 48th Ave in SE Quad	Infiltration Basin (2)	Average score of 6.67. All scores are fair to good.	Basin appears to be working well (dry). Concern should be given with regards to the adjacent Sewage Lagoon which still held water after a dry spell and their failure. Cattails in the basin could signal rich soil content possibly coming from sewage lagoon leaching.
Ottawa	I-96 East of 68th Ave S Side I-96	Detention Basin	Average score of 6.08. One score of poor, the remainder range from fair to good.	Clean the ditch including inlets and outlets. Mark inlet and outlet pipes.
Ottawa	I-196 at Kenowa Ave in NW Quad	Detention Basin	Average score of 5.09. One critical score, one score of poor, the remainder are fair to good.	Repair and clear right-of-way fence along I-196. Clear Outlet 1 of overgrowth. Repair slope along Kenowa adjacent to Inlet 3 where pipe is exposed and clean out pipe outlet. Clear inlet 1 of debris and overgrowth.

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Ottawa	M-231 at Cypress St	Detention Basin	Average score of 7.00. One score of poor, the remainder range from fair to good.	A driveable access will need to be provide for future access. Native plantings are nice but they already are taking over making access dificult. Growth in inlet channel will be a major problem in a few years impeding inflow to the basin.
Ottawa	M-231 at M-104	Detention Basin	Average score of 7.69. All scores range from fair to good.	Mowing of some sort may be required for access in the future until the new roadway system is completed. Gates should have locks.
Wayne	I-94 @ US-24 (Telegraph Rd) in SW Quadrant	Detention Basin	Average score of 5.29. Twelve scores of "poor", the remainders range from fair to good.	Fix broken culverts, clean out clogged culverts, remove trash, remove invasive phragmites, clear accumulated sediment from check dams.
Wayne	I-75 at Gibraltar Rd NW Basin in Flat Creek	Detention Basin	Average score of 6.92. All scores ranged from fair to good.	Coordinate trash removal (preferably twice per year), stabilize erosion issues.
Wayne	I-75 at Gibraltar Rd NE Basin in Flat Creek	Detention Basin	Average score of 5.61. Five scores of "poor", the remainders range from fair to good.	Coordinate trash removal (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Wayne	I-75 at Gibraltar Rd SW Basin in Flat Creek	Detention Basin	Average score of 5.68. Eight scores of “poor”, the remainders range from fair to good.	Coordinate trash removal (preferably twice per year), remove sediment from IN-4, IN-5, IN-6, remove trash from IN-2.
Wayne	I-75 at Gibraltar Rd SE Basin in Flat Creek	Detention Basin	Average score of 6.37. Three scores of “poor”, the remainders range from fair to good.	Clear sediment from inlets and channels, coordinate trash removal (preferably twice per year).
Wayne	I-75 at North Huron River Dr NW Basin in Rockwood	Detention Basin	Average score of 5.35. Six scores of “poor”, the remainders range from fair to good.	Maintain 5' vegetated buffer between edge of mowed grass and basin channels, clear trash from inlets, unplug buried culverts.
Wayne	I-75 at North Huron River Dr NE Basin in Rockwood	Detention Basin	Average score of 5.21. One critical score, seven scores of poor, the remainders range from fair to good.	Coordinate trash and sediment removal from inlets (preferably twice per year), remove overgrown vegetation from inlets and outlet structure so water can flow properly through.
Wayne	I-75 at West Rd SW Basin Adjacent to Ramp in Woodhaven	Detention Basin	Average score of 5.84. Four scores of “poor”, the remainders range from fair to good.	Coordinate trash removal from all inlets and basin interior (preferably twice per year).

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Wayne	I-75 at West Rd SW Basin in Woodhaven	Detention Basin	Average score of 7.21. Four scores of "fair", the remainders ranged from good to new.	Coordinate trash removal near OUT-2 and in basin interior (preferably twice per year).
Wayne	I-75 at West Rd NE Basin in Woodhaven	Detention Basin	Average score of 6.85. Four scores of "poor", the remainders range from fair to new.	Coordinate trash removal, especially on southwest side of basin, and sediment removal from IN-3, organics removal from OUT-2.
Wayne	I-75 and M-85 at Woodruff Rd in Rockwood	Detention Basin	Average score of 6.56. Two scores of poor, the remainders range from fair to good.	Coordinate trash removal from inlets, remove accumulated sediment yearly.
Wayne	I-75 at South Huron River Dr in Rockwood	Detention Basin	Average score of 5.60. One critical score, five scores of poor, the remainders range from fair to good.	Clear IN-4 and 5. Coordinate trash removal (preferably twice per year). Maintaining vegetation buffer to fix erosion issues. Stop mowing intended basin area.
Wexford	US-131 BR in Cadillac	Infiltration Basin	Average score of 7.68. All scores ranged from fair to new.	Clear sediments from Inlet 7.

Table 1: BMP Inspection Summary, 2017				
County	Location	Structures Inspected	Scoring Summary	Recommendations
Wexford	US-131 at Boon Rd	(4) Detention Basins	Average score of 6.80. One score of poor, the remainders range from fair to good.	Clear IN-13, coordinate sediment removal, coordinate trash removal (preferably twice per year).
Wexford	M-37, north of W 12 Rd (west side of road)	Detention Basin	Average score of 8.27. All scores were new or good.	None.
Wexford	M-37, south of W 12 Rd (east side of road)	Detention Basin	Average score of 8.07. All scores were new or good.	None.

ACTIVITY POLLUTION PREVENTION 2: AUDIT THE POLLUTION INCIDENT PREVENTION PLAN (PIPP) REQUIREMENTS

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting

OBJECTIVE

Assure that vehicle maintenance activities statewide do not pollute stormwater runoff to the maximum extent practicable.

DESCRIPTION

Internal auditing of the PIPP will continue to be conducted and implemented.

ANNUAL REPORTING

- Summary of PIPP audits
- Document new programs, policies, procedures and information.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Conduct an audit of the PIPP requirements every three years.	Results of audit reported to Stormwater Program Manager
Annual Assessment: A schedule for auditing will be developed in 2018, audits will begin in 2018.	
Follow-up on any delinquent plan requirements and revise appropriately.	Follow up to be confirmed to Stormwater Program Manager
Annual Assessment: This effort will be a focus for 2019.	
Formally accept the changes made to the PIPP.	To be made by the Stormwater Program Manager
Annual Assessment: This effort will be a focus for 2019.	

ACTIVITY POLLUTION PREVENTION 3: CONDUCT INSPECTIONS OF MAINTENANCE FACILITIES

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINISTRATION 1: Program Assessment and Reporting · POLLUTION PREVENTION 2: Audit PIPP Requirements

OBJECTIVE

Routine inspections of MDOT maintenance facilities to ensure compliance with various components of the permit.

DESCRIPTION

Maintenance facilities will undergo inspection to ensure that facilities comply with: good housekeeping for salt and sand storage, compliance with discharges from cutting, grinding, drilling, or hydro demolition of concrete or asphalt, and fleet maintenance activities.

ANNUAL REPORTING

· Summary of all inspections done and recommendations for each facility.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
An inspection of maintenance facilities shall be conducted at least once every five years. Salt and sand storage facilities, cross connections between storm sewer and sanitary sewer, the washing of vehicles, and labelling of outfall structures shall be inspected.	Reporting of each inspection provided to the Stormwater Program Manager
Annual Assessment: 8 maintenance facilities were inspected during the 2017 monitoring year. See attached summary for details and for a schedule of all inspections during the permit cycle.	
Recommendations shall be presented if practices are not in compliance with the permit.	Reporting of each inspection provided to the Stormwater Program Manager
Annual Assessment: In 2017, there were several issues found during inspections which were presented to the stormwater program manager. All maintenance facilities with noted issues were notified by the Stormwater Program Manager to schedule corrective actions.	
Maintenance facilities with provided recommendations shall address concerns within one year of the inspection.	The Stormwater Program Manager will work closely with maintenance facility personnel to ensure recommendations are incorporated.
Annual Assessment: Recommendations given for issues found during the 2017 inspections should be addressed in 2018.	

Maintenance Facilities – 2017 Inspections Summary

MDOT's Maintenance Facilities are inspected every 5 years on a rotating Basis. Eight maintenance facilities were inspected in 2017. A map of the garages inspected in 2017 as well as the future inspection schedule is presented in **Figure 1**.

Maintenance Facilities were inspected for cross connections between the storm sewer and sanitary sewer systems as well as functionality and maintenance of each of these systems. Items identified as a risk during inspections were assessed for the probability of failure and the consequence of failure. Based on the scores given for each of these categories, items were determined to be high, moderate, or low risks. Recommendations for each of the findings are presented in the **Tables 1 -3**.

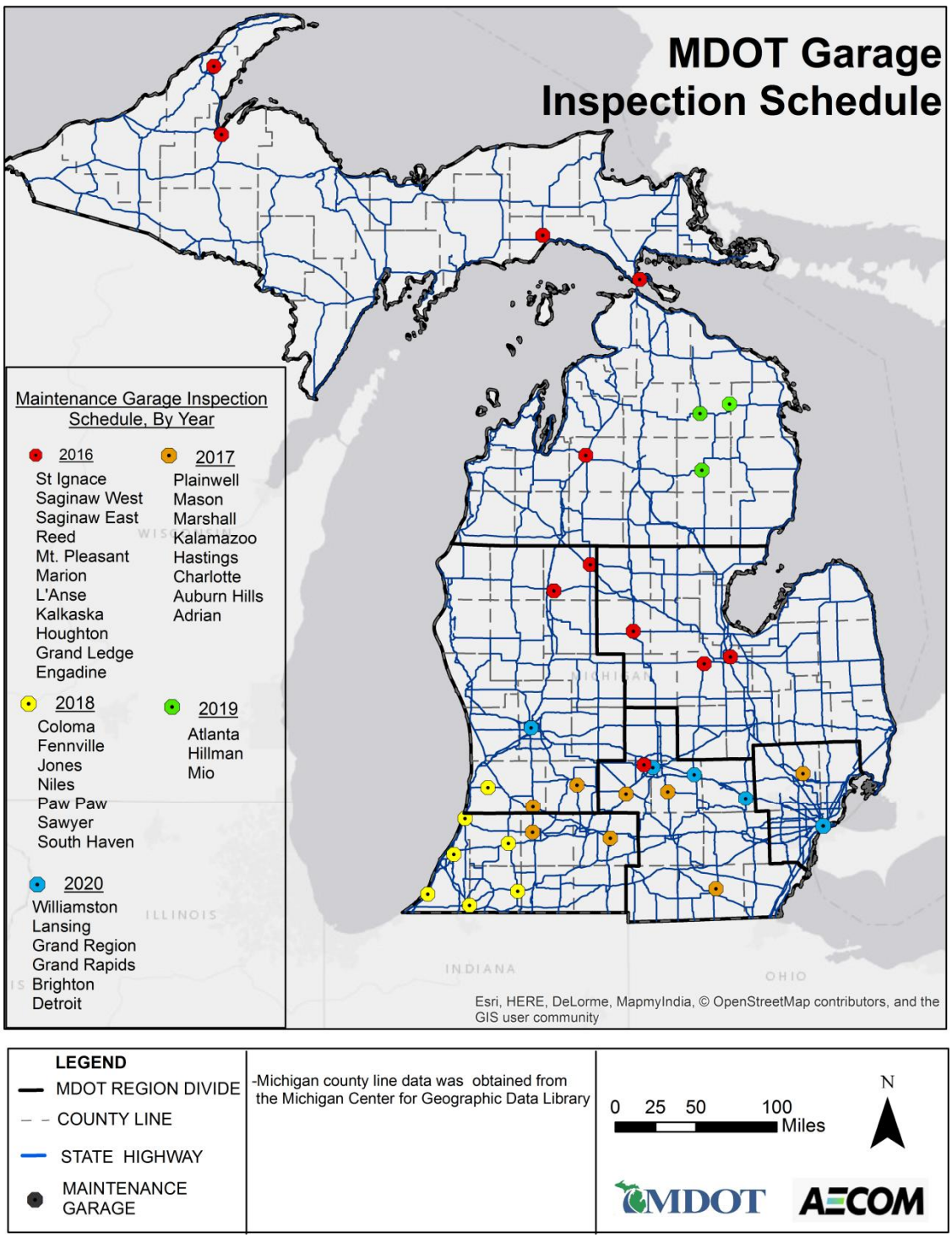


Figure 1 - Maintenance Facility Inspection Schedule

Table 1: Maintenance Facility Locations and Items with High Risk Ratings		
Location	High-Risk Items	Recommendations
Hastings	Pump from SS3 into lagoon does not function.	Fix automatic pump in SS3 such that storm sewer and sanitary sewer lines may properly drain into the lagoon.
Hastings	No existing operation and maintenance plan for lagoon and liner.	Develop an operation and maintenance plan for the proper maintenance of the lagoon.
Kalamazoo	Erosion on west side of lagoon.	Cease the spilling of materials into lagoon (on west side of pond) and stabilize eroded areas.
Marshall	Bituminous asphalt materials spilling out of building wall and onto pavement. Wall appears to be failing.	Replace wall on storage building which holds bituminous asphalt.
Marshall	Floor drains from maintenance garage currently drain to lagoon.	Consider connecting the floor drains from the garage into the sanitary sewer line and bypass the lagoon.
Marshall	No existing operation and maintenance document for lagoon and liner.	Develop an operation and maintenance plan for the proper maintenance of the lagoon.
Mason	Storm sewer is connected to sanitary sewer, Culv4 discharges to open ditch.	Abandon Culv4 and remove structure.
Plainwell	Issue with casting/adjustment rings such that stormwater can freely enter the brine storage tank.	Seal castings and adjustment rings at SS2, SS3 to minimize any stormwater entering the brine holding tank. Regrade the surface to minimize ponding water over the brine holding tank.
Plainwell	Brine holding tank frequently floods.	If repaving and redirecting flow from flow away from CB1 does not alleviate flooding in brine holding tank, seek alternative options such as fully pumping tank to remove water and sediments or replacing with a larger holding tank.
Plainwell	Holes in the lagoon lining, allowing water to infiltrate into the groundwater.	Patch holes in liner of the lagoon.
Plainwell	No existing operation and maintenance plan for lagoon and liner.	Develop an operation and maintenance plan for the proper maintenance of the lagoon.

Table 2: Maintenance Facility Locations and Items with Moderate Risk Ratings		
Location	Moderate- Risk Items	Recommendations
Auburn Hills	Incorrect lid on CB4	Replace lid on CB4 with a stormwater cover.
Auburn Hills	Objects inside CB4	Remove steel pole and attached interior objects on CB4, replace with proper cover.
Auburn Hills	Erosion issues surrounding CB7	Address erosion issues (if determined to be on MDOT property).
Charlotte	Oil water separator covers could not be opened during inspection.	Use machinery to open oil water separator covers and investigate if needs pumping.
Hastings	Sediments and trash in culverts (minor).	Clear sediment and trash from culverts located on north side of the site.
Hastings	Pump from SS3 into lagoon does not function.	The garage should consider connecting the garage floor drains and wash bay to the sanitary sewer line. This could easily be done by connecting CB3 to SS2. This could offer ease of maintenance with the lagoon system. Note that if this was done, the cover on CB3 would need to be changed to a sanitary sewer cover.
Kalamazoo	Trash and sediments at CB2 and CB3	Clear trash and sediments from CB2, CB3.
Kalamazoo	Erosion near Culv1 and Culv2	Do not mow and allow earth to stabilize.
Kalamazoo	Fertilizer spilled on the north side of the lagoon.	Stop dumping of these materials.
Kalamazoo	Erosion near SS2	Stabilize erosion near guard rail which is just south of SS2.
Marshall	Sediments and vegetation at CB9	Remove sediments and vegetation surrounding CB9.
Marshall	Clogging between structures CB1 and CB2	Remove clog between CB1 and CB2.
Marshall	Culvert in SS1 is abandoned but pipe has an open ending.	Plug the end of SS1 such that no materials from the sanitary sewer enter the PVC pipe.
Marshall	Entrances to brine holding tanks (CB13, CB14) do not have tight seal on brine tank.	Repair manhole structures and covers such that the entrance to the brine structure is sealed.
Mason	Downspouts RD5, RD6, RD7, and RD8 are collapsed.	Replace collapsed downspouts.

Table 3: Locations and Items with Low Risk Ratings		
Location	Low-Risk Items	Recommendation
Auburn Hills	Unattached roof drain (Culv4)	Replace with connected roof drain.
Auburn Hills	Flooding near garage access gate	Construct ditching to convey water to the north side of office buildings (to Culv 1 and Culv 2) or a catch basin structure connecting to storm sewer system (CB2 and CB3).
Auburn Hills	Standing water in SS4 although septic not in use.	Drain and abandon SS4 and septic tank.
Kalamazoo	Sediments surrounding culverts emptying into lagoon.	Clear sediments from culverts which empty in the lagoon.
Kalamazoo	Sediment, debris, and trash in Swale 1	Clear sediment, debris, and trash from Swale 1.
Mason	Culv3 is attached to RD10 and discharges to impervious area.	Remove Culv3 and discharge roof drain to pervious area.
Mason	Incorrect lid on FD6.	Replace current lid on FD6 with a grated lid.

ACTIVITY POLLUTION PREVENTION 4: DOCUMENTATION OF ROAD MAINTENANCE ACTIVITIES

MONITORING YEAR: 2017

Minimum Control Measure : Construction, Post Construction, Good Housekeeping **Statewide or Urbanized Area**: Statewide **Implemented in Regions**: All Regions	**Related Activities** · ADMINSTRATION 1: Program Assessment and Reporting

OBJECTIVE

Document road maintenance activities related to stormwater and stormwater pollution control.

DESCRIPTION

Road maintenance activities include catch basin cleaning and street sweeping will be documented and reported to the Stormwater Program Manager on an annual basis for inclusion in the Stormwater Annual Report. MDOT roadways will be operated and maintained and storage facilities will be constructed to reduce pollutants washing into surface waters statewide.

ANNUAL REPORTING

- Estimate actual quantity of salt used for de-icing versus maximum calculated amount based on Maintenance Performance Guide 14100.
- Track hours of street sweeping and catch basin cleaning conducted.

MEASURABLE GOALS

MEASURABLE GOAL	MEASURE OF ASSESSMENT
Street sweeping will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F1 for recorded street sweeping activity, by region.	
Catch-basin cleaning will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F2 for recorded catch basin cleaning activity, by region.	
Follow MDOT Maintenance Performance Guide for all maintenance activities (road maintenance, street sweeping, catch basin cleanout, bridge, unpaved road maintenance, right of way, culvert, underdrain and edge cleaning, facility and truck washing, deicing, cold weather)	Maintenance Staff Manager to ensure all employees follow procedures.
Annual Assessment: All regions have been in compliance with the maintenance performance guidelines for 2017. A summary of winter maintenance including salt, sand, and liquid treatment statewide, per county, and per MDOT region is presented in the following pages. Refer to Figure F3 for recorded washout repairs per MDOT region, as well.	

STATEWIDE SUMMARY : FY 2017 County & Garage Winter Material Usage

Year End Report

Statwide Statistics YTD

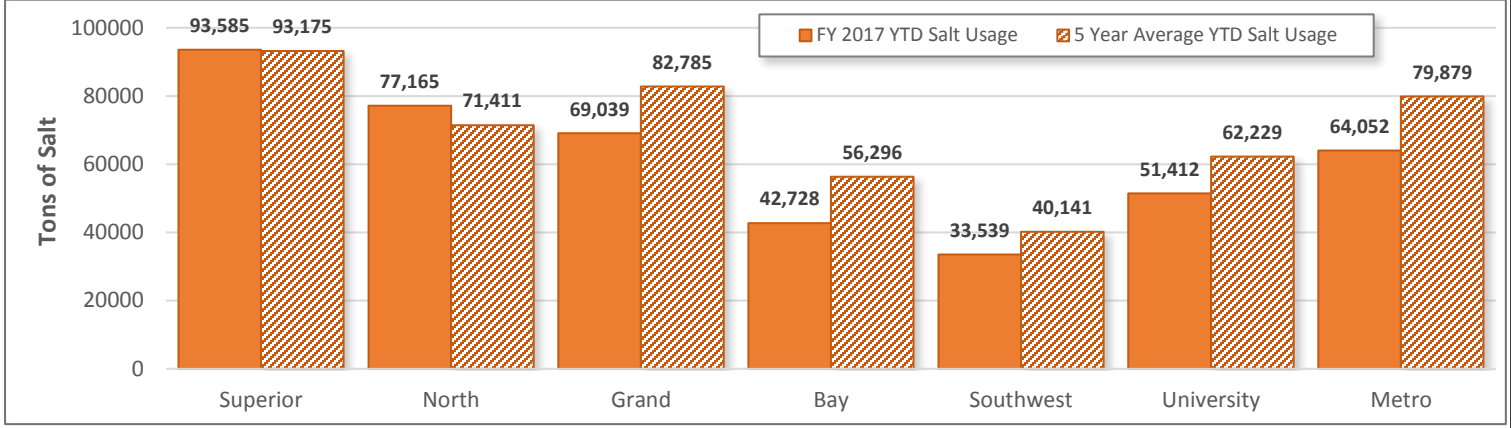
Statewide Total Lane Miles
30232.7

Salt Usage per Lane Mile
14.3

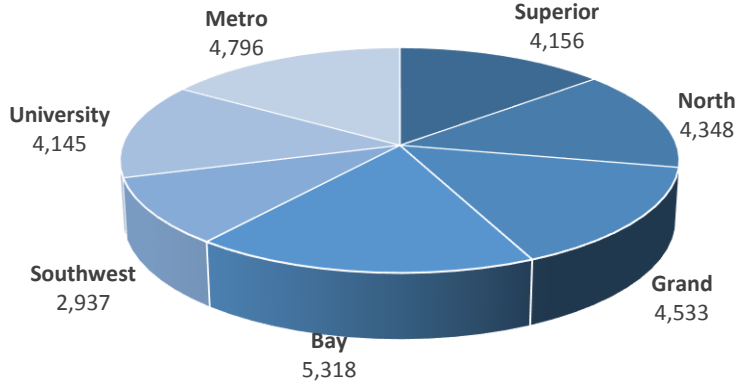
Liquid Usage per Lane Mile
54.9

Sand Usage per Lane Mile
2.9

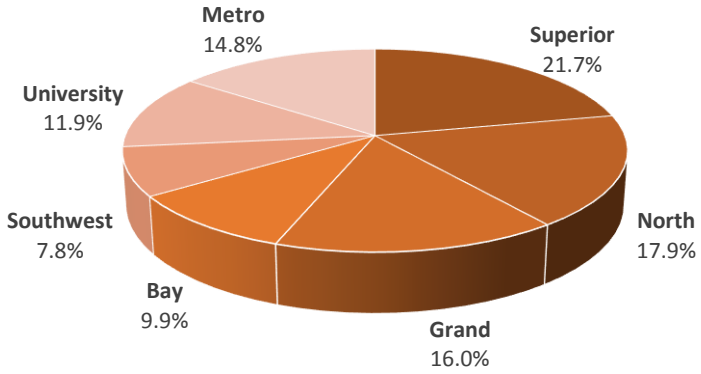
YTD Salt Usage by Region FY 2017



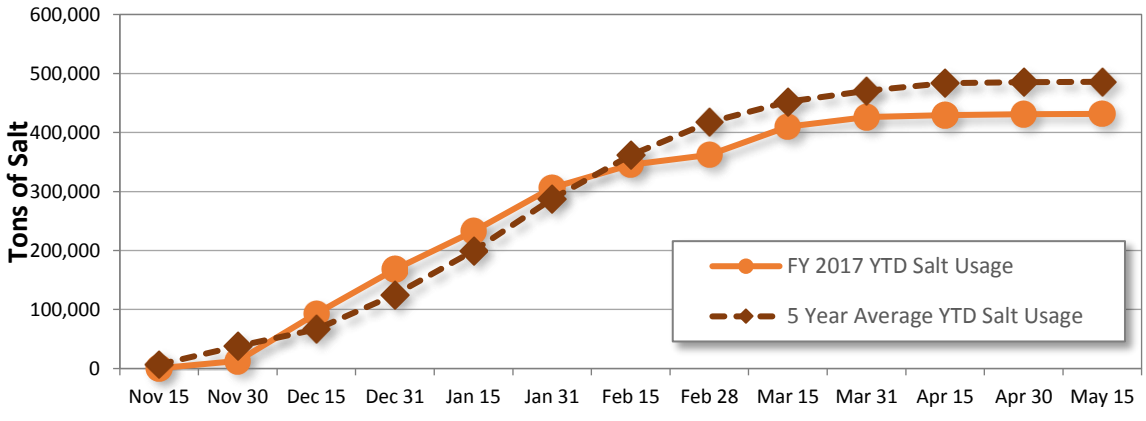
Regions Lane Miles FY 2017



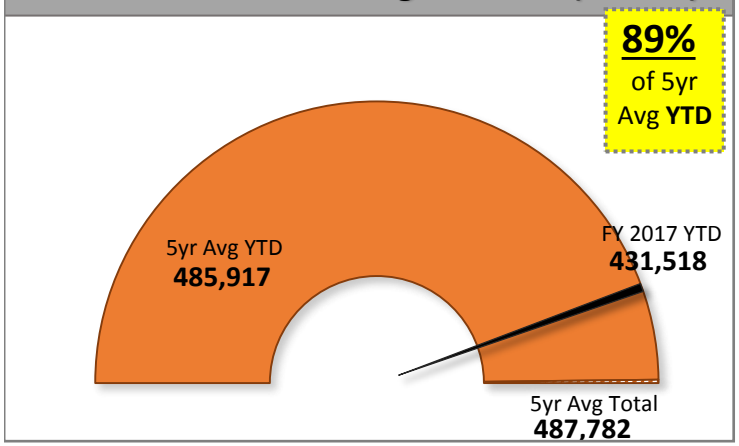
YTD Salt Usage by Region FY 2017



Cumulative Salt Usage FY 2017 YTD

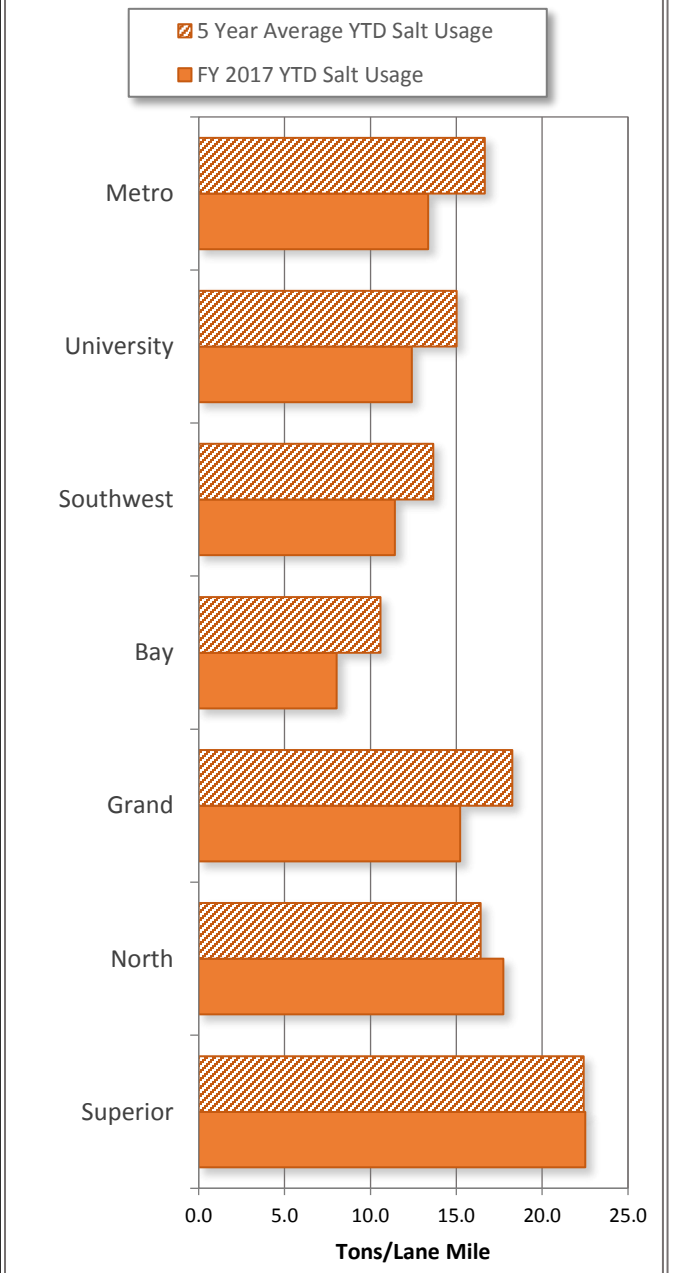


Statewide YTD Salt Usage FY 2017 (in tons)

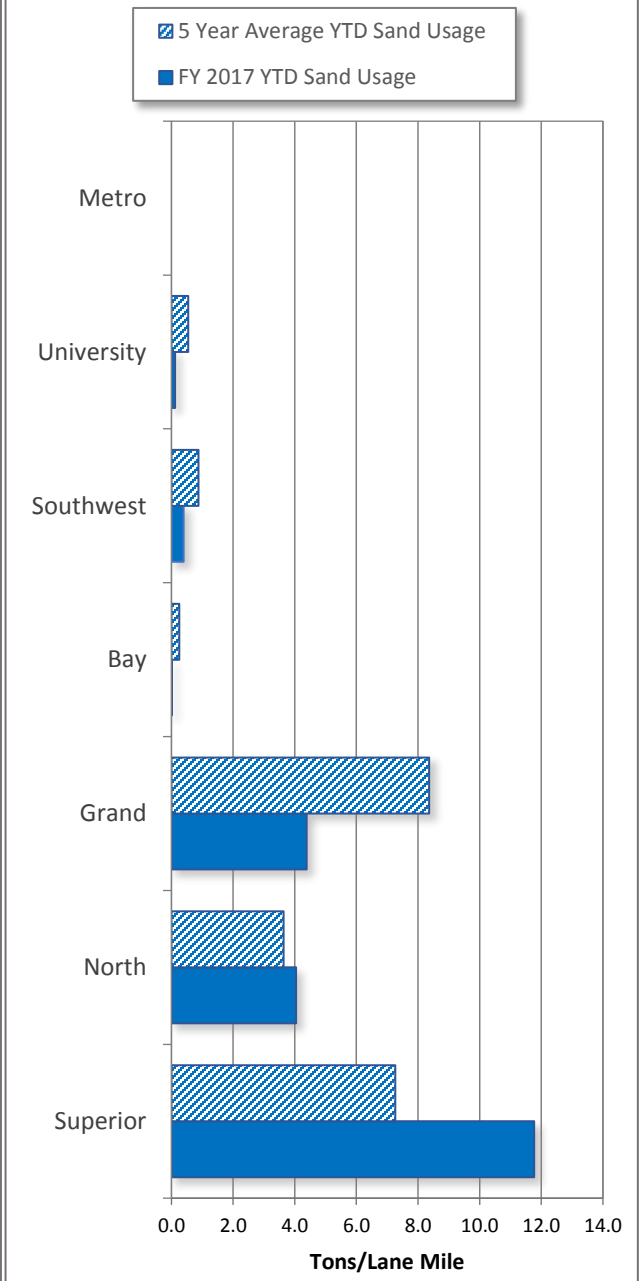


STATEWIDE SUMMARY : FY 2017 County & Garage Winter Material Usage

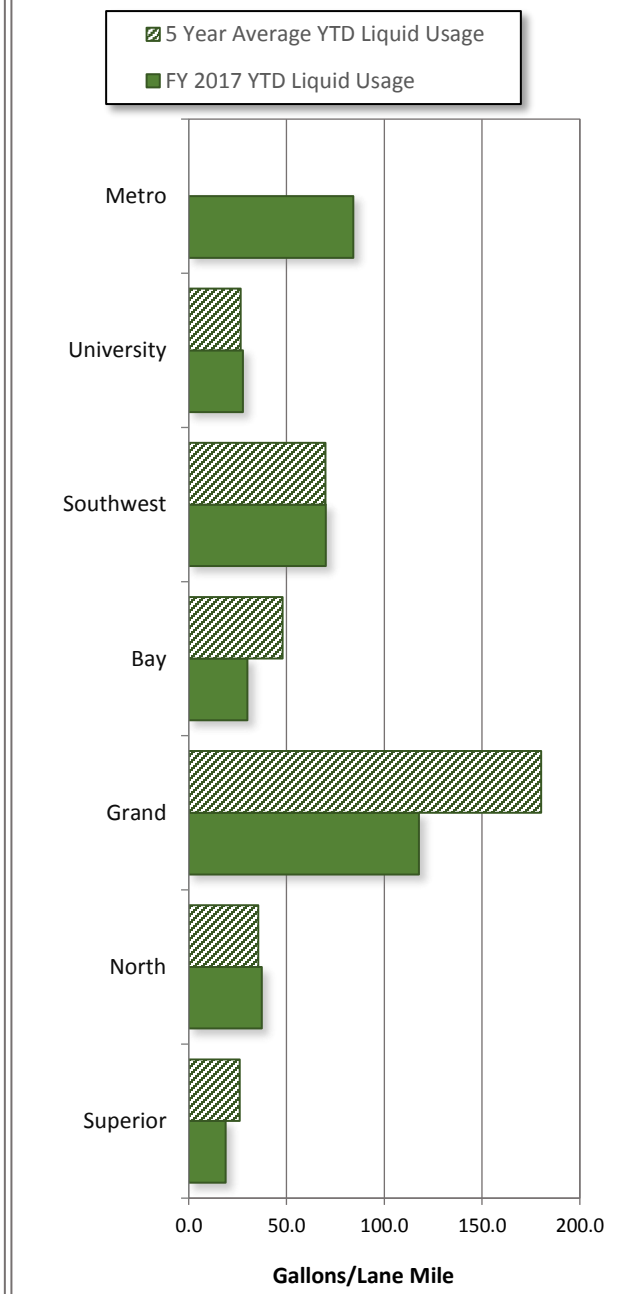
Salt Usage FY 2017 YTD per lane mile



Sand Usage FY 2017 YTD per lane mile



Liquid Usage FY 2017 YTD per lane mile



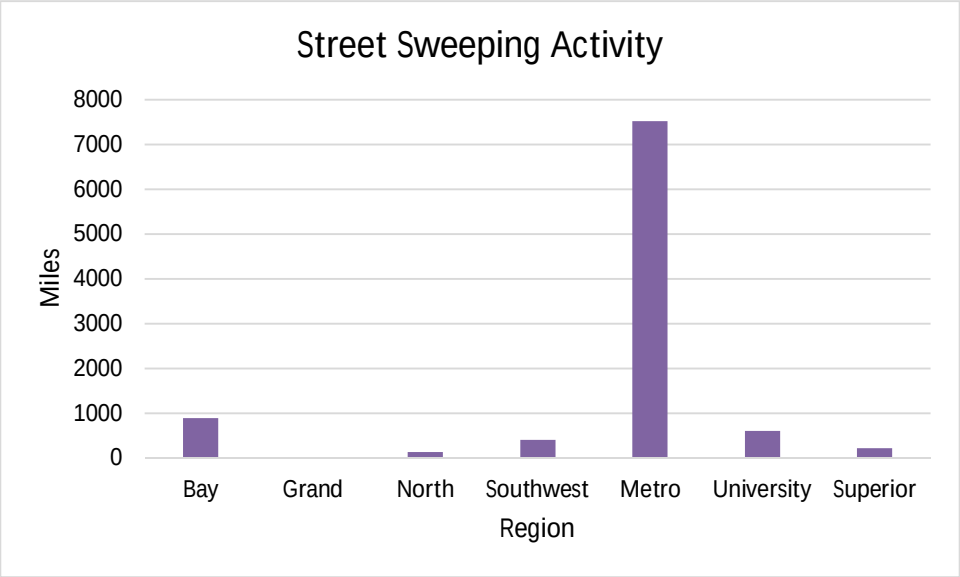


Figure F1 – 2017 Street Sweeping By Region

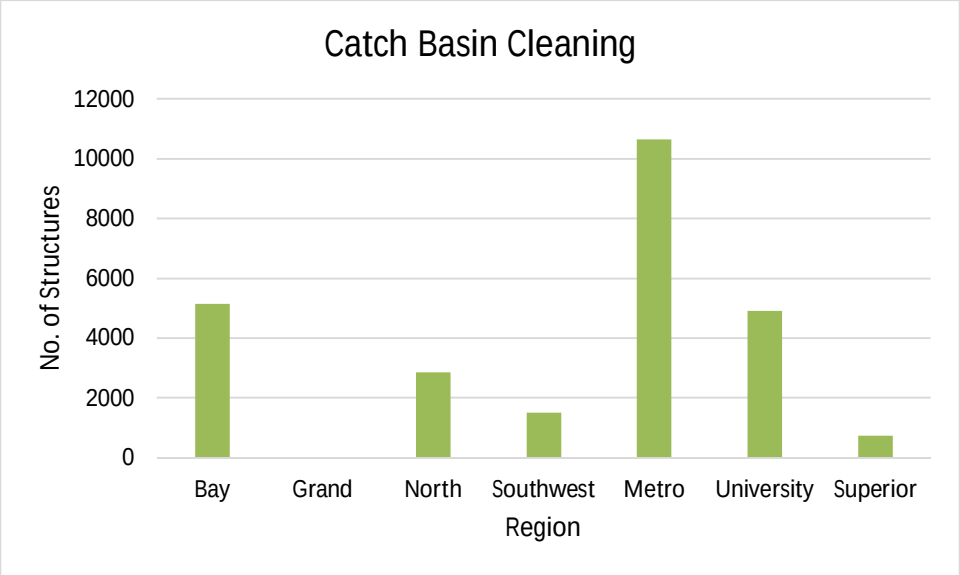


Figure F2 – 2017 Catch Basin Cleaning By Region

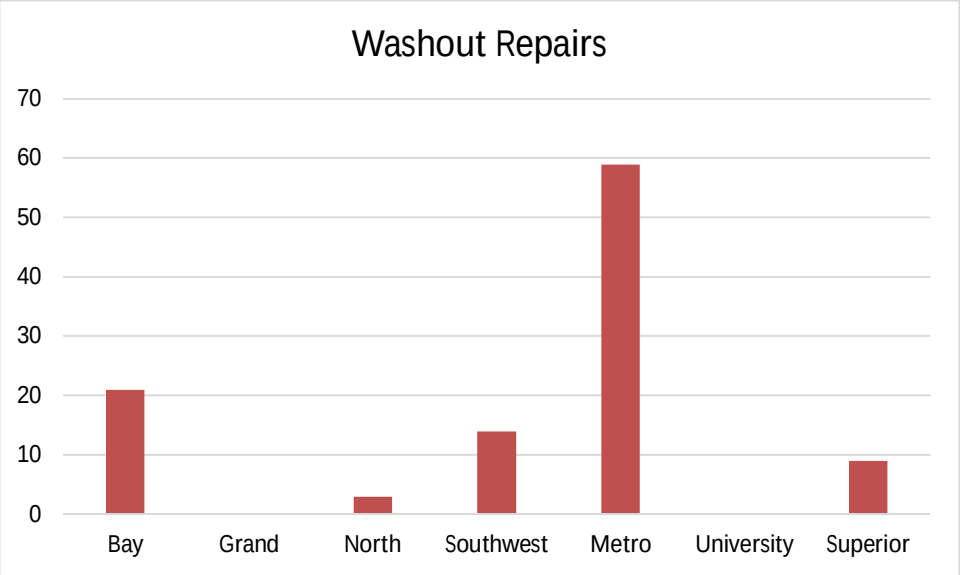


Figure F3 – 2017 Washout Repairs By Region